SENNHEISER
evolution wireless G3
100 Series
Instruction manual

Contents

Important safety instructions 2
System 2
Receiver 2
Bodypack transmitter and radio microphone 3
The ew 100 G3 evolution wireless series 4
The frequency bank system 4
Product overview 5
Overview of the EM 100 receiver 5
Overview of the displays of the EM 100 receiver 6
Overview of the SK 100 bodypack transmitter 7
Overview of the displays of the SK 100 bodypack transmitter 8
Overview of the SKM 100 radio microphone 9
Overview of the displays of the SKM 100 radio microphone 10
Putting the devices into operation 11
EM 100 receiver 11
SK 100 bodypack transmitter 13
SKM 100 radio microphone 15
Using the devices 17
Switching the devices on/off 17
Synchronizing a transmitter with the receiver 20
Deactivating the lock mode temporarily 21
Muting the audio signal or deactivating the RF signal 22
Selecting a standard display 24
Overview of the operating menus 25
Cleaning the devices 27
Specifications 31
Manufacturer Declarations 35

For an animated instruction manual, visit the respective product pages at www.sennheiser.com.

There you will also find detailed instruction manuals for the individual devices.

Important safety instructions

System

- Read this instruction manual.
- Keep this instruction manual. Always include this instruction manual when passing the devices and the mains unit on to third parties.
- Heed all warnings and follow all instructions in this instruction manual.
- Only clean the devices when they are not connected to the mains. Use a cloth for cleaning.
- Only use attachments/accessories specified by Sennheiser.
- Refer all servicing to qualified service personnel.
  Servicing is required if the devices or the mains unit have been damaged in any way, liquid has been spilled, objects have fallen inside, the devices have been exposed to rain or moisture, do not operate properly or have been dropped.
- WARNING: To reduce the risk of fire or electric shock, do not use the devices and the mains unit near water and do not expose them to rain or moisture.

Receiver

- Only use the supplied mains unit.
- Unplug the mains unit from the wall socket
  - to completely disconnect the device from the mains,
  - during lightning storms or
  - when unused for long periods of time.
- Only operate the mains unit from the type of power source specified in the chapter "Specifications" (see page 31).
- Ensure that the mains unit is
  - in a safe operating condition and easily accessible,
  - properly plugged into the wall socket,
  - only operated within the permissible temperature range,
  - not covered or exposed to direct sunlight for longer periods of time in order to prevent heat accumulation (see "Specifications" on page 31).
- Do not block any ventilation openings. Install the device in accordance with the instructions given in this instruction manual.
- Do not install the device and the mains unit near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
- Do not overload wall outlets and extension cables as this may result in fire and electric shock.

- Danger due to high volumes
  This device is capable of producing sound pressure exceeding 85 dB(A). 85 dB(A) is the sound pressure corresponding to the maximum permissible volume which is by law (in some countries) allowed to affect your hearing for the duration of a working day. It is used as a basis according to the specifications of industrial medicine. Higher volumes or longer durations can damage your hearing. At higher volumes, the duration must be shortened in order to prevent hearing damage. The following are sure signs that you have been subjected to excessive noise for too long a time:
  – You can hear ringing or whistling sounds in your ears.
  – You have the impression (even for a short time only) that you can no longer hear high notes.

Bodypack transmitter and radio microphone

Do not place the devices near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.

Intended use of the system

Intended use of the ew 100 G3 series devices includes:

- having read this instruction manual especially the chapter "Important safety instructions",
- using the devices within the operating conditions and limitations described in this instruction manual.

"Improper use" means using the devices other than as described in these instructions, or under operating conditions which differ from those described herein.

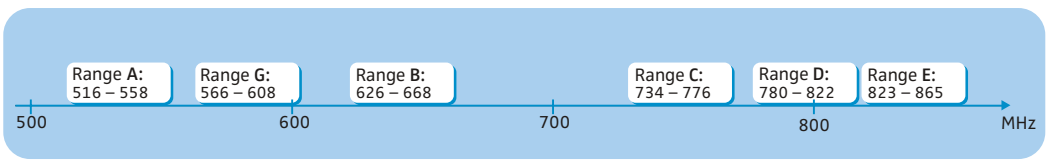
The ew 100 G3 evolution wireless series

With the ew 100 G3 evolution wireless series, Sennheiser offers high-quality state-of-the-art RF transmission systems with a high level of operational reliability and ease of use. Transmitters and receivers permit wireless transmission with studio-quality sound.

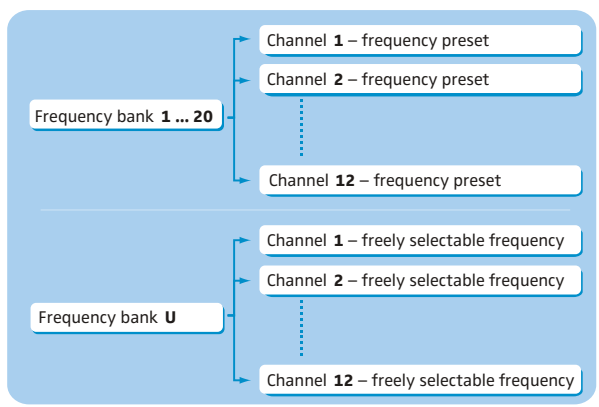
The frequency bank system

Please note: Frequency usage is different for each country. Your Sennheiser partner will have all the necessary details on the available legal frequencies for your area.

The devices are available in 6 UHF frequency ranges with 1,680 frequencies per frequency range:



Each frequency range (A–E, G) offers 21 frequency banks with up to 12 channels each:


Frequency bank 1 ... 20
Channel 1 – frequency preset
Channel 2 – frequency preset
Channel 12 – frequency preset
Frequency bank U
Channel 1 – freely selectable frequency
Channel 2 – freely selectable frequency
Channel 12 – freely selectable frequency

Each of the channels in the frequency banks "1" to "20" has been factory-preset to a fixed frequency (frequency preset).

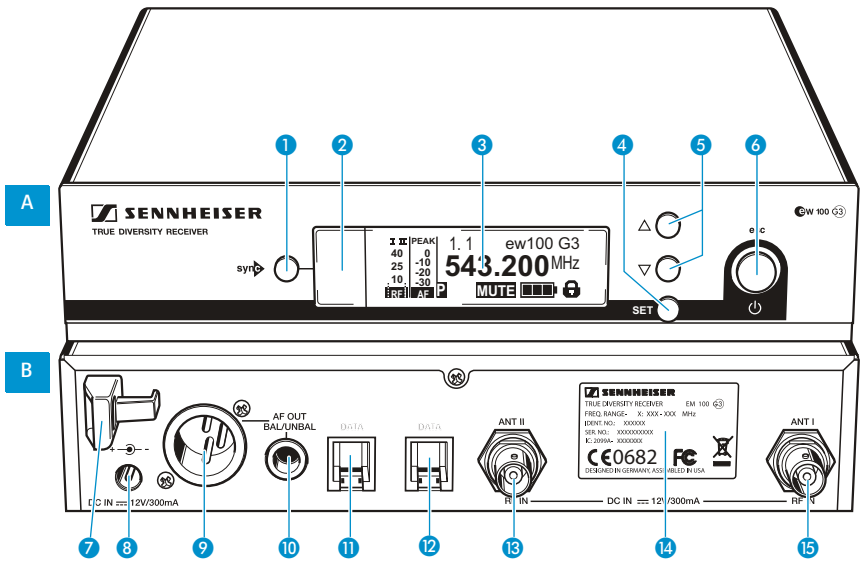
The factory-preset frequencies within one frequency bank are intermodulation-free. These frequencies cannot be changed.

For an overview of the frequency presets, please refer to the supplied frequency information sheet. Updated versions of the frequency information sheet can be downloaded from the product page on our website at www.sennheiser.com.

The frequency bank "U" allows you to freely select and store frequencies. It might be that these frequencies are not intermodulation-free.

Product overview

Overview of the EM 100 receiver



A Operating elements – front panel

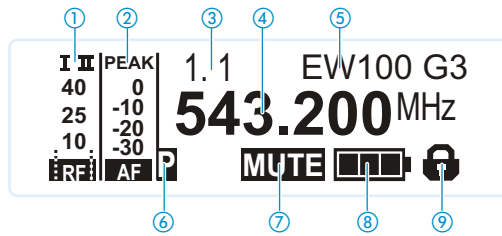
1. sync button
2. Infra-red interface
3. Display panel, backlit in orange
4. SET button
5. UP/DOWN button
6. STANDBY button,
   serves as the ESC (cancel) key in the operating menu

B Operating elements – rear panel

7. Cable grip for power supply DC cable
8. DC socket (DC IN) for connection of NT 2 mains unit
9. Audio output (AF OUT BAL), XLR-3M socket, balanced
10. Audio output (AF OUT UNBAL), ¼" (6.3 mm) jack socket, unbalanced
11. Service interface (DATA)
12. Service interface (DATA)
13. Antenna input I (ANT II) with remote power supply input, BNC socket
14. Type plate
15. Antenna input I (ANT I) with remote power supply input, BNC socket

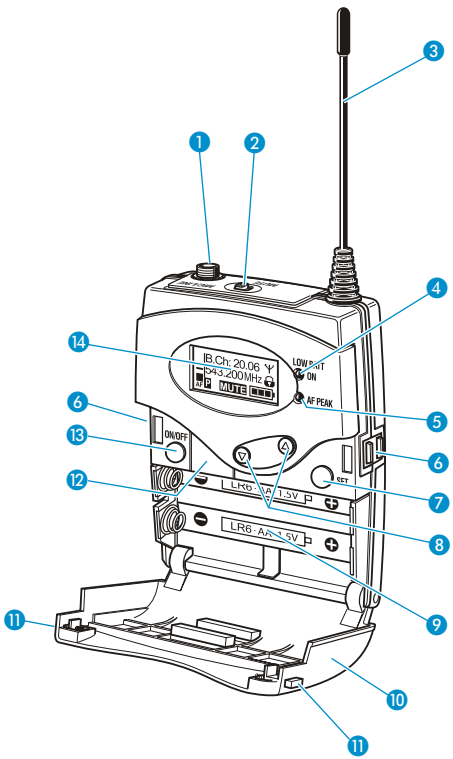
Overview of the displays of the EM 100 receiver

After switch-on, the receiver displays the standard display "Receiver Parameters". For further illustrations and examples of the different standard displays, please refer to 24. This standard display displays the operating states of the receiver.



Display	Meaning
① RF level "RF" (Radio Frequency)	Diversity display: I II Antenna input I is active I II Antenna input II is active RF signal level: Field strength of the transmitted signal Squelch threshold level
② Audio level "AF" (Audio Frequency)	Modulation of the transmitter with peak hold function. When the level display for audio level shows full deflection, the audio input level is excessively high. When the transmitter is overmodulated frequently or for extended periods of time, the "PEAK" display is shown inverted.
③ Frequency bank and channel	Current frequency bank and channel number
④ Frequency	Current receiving frequency
⑤ Name	Freely selectable name of the receiver
⑥ Pilot tone "P"	Activated pilot tone evaluation
⑦ Muting function "MUTE"	Receiver is muted Receiver does not output an audio signal (see also page 28).
⑧ Battery status of the transmitter	Charge status: approx. 100% approx. 70% approx. 30% Icon is flashing; charge status is critical
⑨ Lock mode icon	Lock mode is activated

Overview of the SK 100 bodypack transmitter

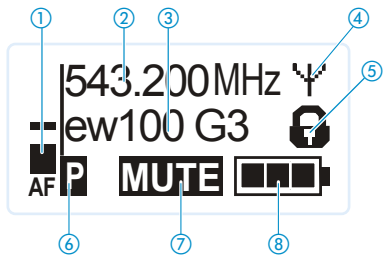


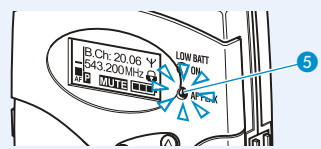
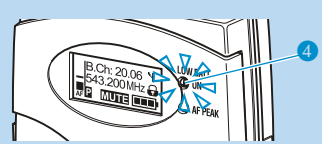
Operating elements

1. Microphone/instrument input (MIC/LINE), 3.5 mm jack socket, lockable
2. MUTE switch
3. Antenna
4. Operation and battery status indicator, red LED (lit = ON/flashing = LOW BATTERY)
5. Audio overmodulation indicator, yellow LED (lit = AF PEAK)
6. Charging contacts
7. SET button
8. ▲/▼ rocker button (UP/DOWN)
9. Battery compartment
10. Battery compartment cover
11. Battery compartment catches
12. Infra-red interface
13. ON/OFF button, serves as the ESC (cancel) key in the operating menu
14. Display panel, backlit in orange

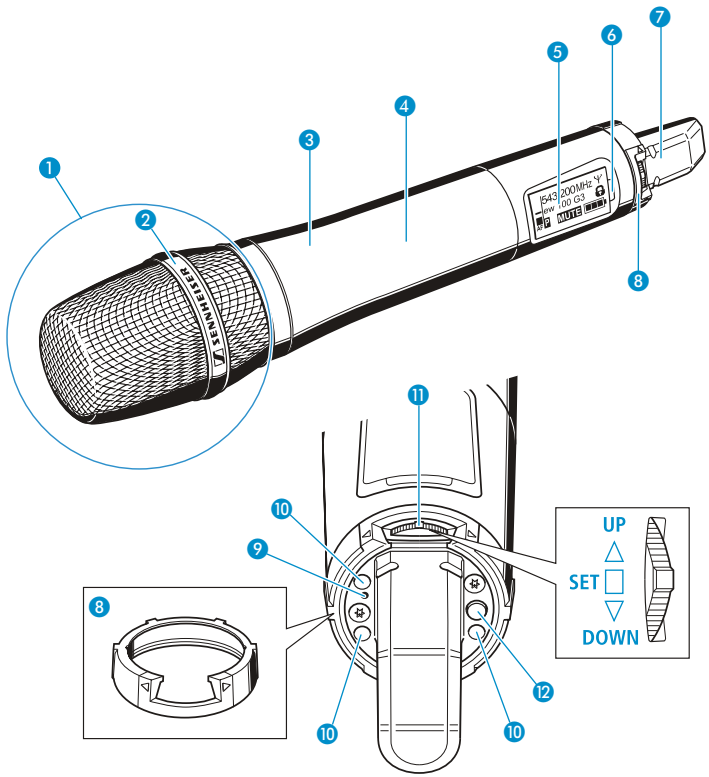
Overview of the displays of the SK 100 bodypack transmitter

After switch-on, the bodypack transmitter displays the standard display "Frequency/Name". For further illustrations and examples of the different standard displays, refer to 24.
The display backlighting is automatically reduced after approx. 20 seconds.



Display	Meaning
① Audio level "AF"	Modulation of the bodypack transmitter with peak hold function When the transmitter's audio input level is excessively high, the "AF" display shows full deflection and, in addition, the yellow AF PEAK LED 5 lights up: 
② Frequency	Current transmission frequency
③ Name	Freely selectable name of the bodypack transmitter
④ Transmission icon	RF signal is being transmitted
⑤ Lock mode icon	Lock mode is activated
⑥ "P" (Pilot)	Pilot tone transmission is activated
⑦ "MUTE"	Microphone or line input is muted
⑧ Battery status	Charge status: approx. 100% approx. 70% approx. 30% Charge status is critical, the red LOW BATT LED 4 is flashing: 

Overview of the SKM 100 radio microphone

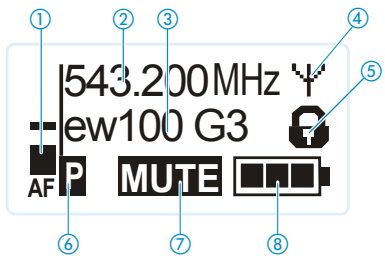


Operating elements

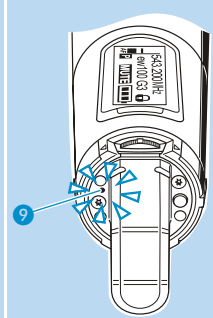
1. Microphone head (interchangeable)
2. Name and pick-up pattern of the microphone head (not visible here)
3. Body of radio microphone
4. Battery compartment (not visible from outside)
5. Display panel, backlit in orange
6. Infra-red interface
7. Antenna
8. Color-coded protection ring; available in different colors
9. Operation and battery status indicator, red LED
   (lit = ON/flashing = LOW BATTERY)
10. Charging contacts
11. Multi-function switch:
    ▼ (DOWN), ▲ (UP) and ▬ (SET)
12. ON/OFF button,
    serves as the ESC (cancel) key in the operating menu

Overview of the displays of the SKM 100 radio microphone

After switch-on, the radio microphone displays the standard display "Frequency/Name". For further illustrations and examples of the different standard displays, refer to 24.
The display backlighting is automatically reduced after approx. 20 seconds.



Display	Meaning
① Audio level "AF"	Modulation of the radio microphone with peak hold function
② Frequency	Current transmission frequency
③ Name	Freely selectable name of the radio microphone
④ Transmission icon	RF signal is being transmitted
⑤ Lock mode icon	Lock mode is activated
⑥ "P" (Pilot)	Pilot tone transmission is activated
⑦ "MUTE"	Audio signal is muted
⑧ Battery status	Charge status: approx. 100% approx. 70% approx. 30% Charge status is critical, the red LOW BATT LED ⑨ is flashing:



Putting the devices into operation

EM 100 receiver

You can set up the receiver on a flat surface or mount it into a 19" rack. For information on rack mounting, refer to the instruction manual of the EM 100 receiver available on the ew G3 product page at www.sennheiser.com.

Setting up the receiver on a flat surface

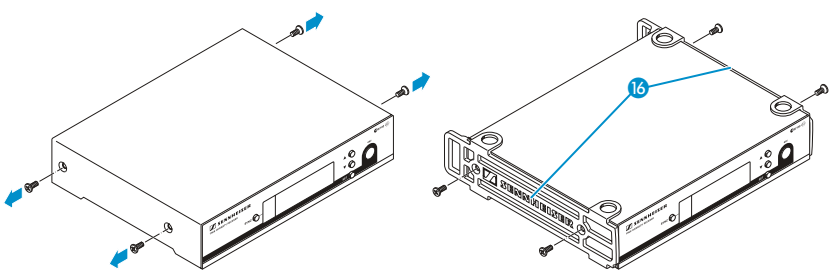
Place the receiver on a flat, horizontal surface. Please note that the device feet can leave stains on delicate surfaces.

The stacking elements are designed to help protect the operating elements from damage or deformation, e.g. if the receiver is dropped. Therefore, fasten the stacking elements, even if you do not want to stack your receivers.

Fastening the stacking elements

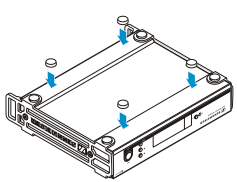
To fasten the stacking elements 16:

- Unscrew and remove the two recessed head screws (M4x8) on each side of the receiver (see diagram).
- Secure the stacking elements 16 to the sides of the receiver using the previously removed recessed head screws (see diagram).



Fitting the device feet

The device feet are fitted to the base of the receiver (see diagram).

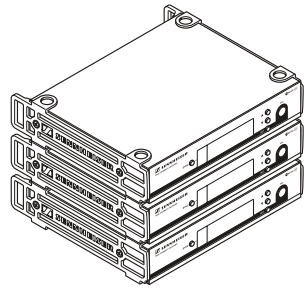


If you want to stack receivers (see following section), only fit the device feet to the base of the lowermost receiver.

- Clean the base of the receiver where you want to fix the device feet.
- Fix the device feet to the base of the receiver by peeling off the backing paper and fitting them as shown on the left.

Stacking receivers

- Stack several receivers on top of each other.



CAUTION!

Danger of injury due to toppling receiver stacks!

High receiver stacks can easily topple over.

- Place the stack on an absolutely flat surface.
- Secure the stack against toppling over.
- Fasten the stacking elements as described in the previous section.
- Stack the receivers so that the recesses of the stacking elements completely engage with each other.

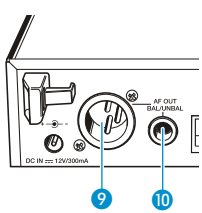
Connecting the rod antennas

The supplied rod antennas are suitable for use in good reception conditions.

- Connect the antennas. You have the following options:
  - You can connect the rod antennas to the rear of the receiver.
  - You can use the optional AM 2 antenna front mount kit and mount the rod antennas to the front of the receiver (see the instruction manual of the EM 100 receiver available on the ew G3 product page at www.sennheiser.com).
- Align the antennas in a V-shape.

When using more than one receiver, we recommend connecting remote antennas and, if necessary, using Sennheiser antenna accessories. Fore more information, visit the ew G3 product page at www.sennheiser.com.

Connecting an amplifier/mixing console



The receiver's XLR-3M socket 9 and the ¼" (6.3 mm) jack socket 10 are connected in parallel.

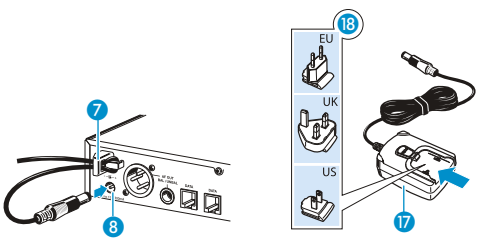
- Use a suitable cable to connect the amplifier/mixing console to the XLR-3M socket 9 or the ¼" (6.3 mm) jack socket 10.
- Via the operating menu, adjust the audio output level ("AF Out") of the receiver to the input of the amplifier or mixing console (see page 26). The audio output level is adjusted via the operating menu and is common for both sockets.

Connecting the mains unit

Only use the supplied mains unit. It is designed for the receiver and ensures safe operation.

To connect the mains unit:

- Insert the connector of the mains unit (17) into the socket (8) of the receiver.
- Pass the cable of the mains unit through the cable grip (7).
- Slide the supplied country adapter (18) onto the mains unit (17).
- Plug the mains unit (17) into a wall socket.

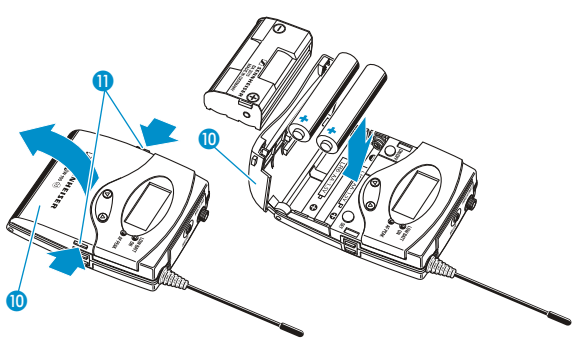


SK 100 bodypack transmitter

Inserting the batteries/accupack

For powering the bodypack transmitter, you can either use two 1.5 V AA size batteries or the rechargeable Sennheiser BA 2015 accupack.

- Push the two catches (11) in the direction of the arrows and open the battery compartment cover (10).



- Insert the two batteries or the accupack as shown above.
  Observe correct polarity when inserting the batteries/accupack.
- Close the battery compartment.
  The battery compartment cover (10) locks into place with an audible click.

Charging the accupack

To charge the BA 2015 accupack:

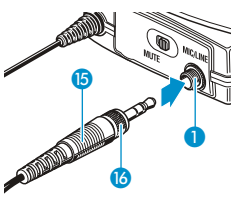
- Insert the bodypack transmitter into the L 2015 charger (optional accessory).

> The L 2015 charger can only charge the combination BA 2015 accupack/bodypack transmitter. Standard batteries (primary cells) or individual rechargeable battery cells cannot be charged.

Connecting the microphone cable/instrument cable

The audio input is designed for the connection of both condenser microphones and instruments (e.g. guitars). DC powering of the condenser microphones is via the audio input.

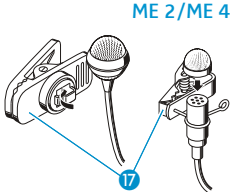
- Use one of the recommended Sennheiser microphones or the optional CI 1 instrument cable.



- Connect the 3.5 mm jack plug ⑮ from the Sennheiser microphone or instrument cable to the 3.5 mm jack socket MIC/LINE ①.
- Lock the 3.5 mm jack plug by screwing down the coupling ring ⑯ of the cable.
- Via the operating menu, adjust the sensitivity of the microphone/line input.

Attaching and positioning the corresponding microphones

ME 2/ME 4



- Use the microphone clip ⑰ to attach the microphone to clothing (e.g. tie, lapel).

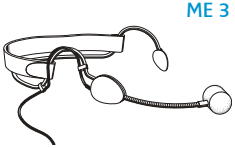
The ME 2 clip-on microphone (shown on the right in the diagram) has an omni-directional pick-up pattern. It is therefore not necessary to position it precisely.

- Attach the ME 2 microphone as close as possible to the sound source.

The ME 4 clip-on microphone (shown on the left in the diagram) has a cardioid pick-up pattern.

- Position the ME 4 microphone so that its sound inlet is directed towards the sound source (e.g. mouth).

ME 3



- Adjust the ME 3 headmic so that a comfortable and secure fit is ensured.

The ME 3 headmic has a cardioid pick-up pattern.

- Position the microphone so that its sound inlet is directed towards the sound source (e.g. mouth).

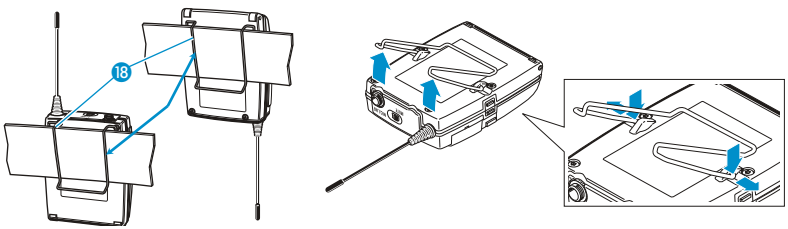
Attaching the bodypack transmitter to clothing

You can use the belt clip ⑱ to attach the bodypack transmitter to clothing (e.g. belt, waistband).

The belt clip is detachable so that you can also attach the transmitter with the antenna pointing downwards. To do so, withdraw the belt clip ⑱ from its fixing points and attach it the other way round. The belt clip ⑱ is secured so that it cannot slide out of its fixing points accidentally.

To detach the belt clip:

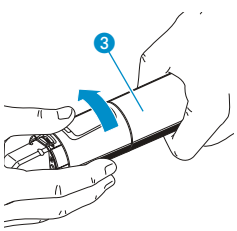
- Lift one side of the belt clip as shown in the diagram on the right-hand side.
- Press down the belt clip at one fixing point and pull it out of the transmitter housing.
- Repeat for the other side.



SKM 100 radio microphone

Inserting the batteries/accupack

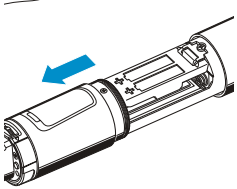
For powering the radio microphone, you can either use two 1.5 V AA size batteries or the rechargeable Sennheiser BA 2015 accupack.



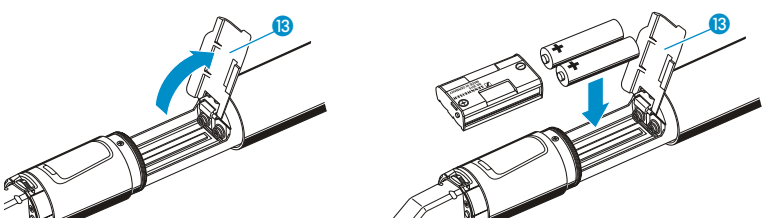
- Unscrew the lower part of the radio microphone from the radio microphone's body 3 by turning it counterclockwise.

When unscrewing the radio microphone during operation, the muting function is automatically activated. "MUTE" appears on the display panel.

When screwing the lower part of the radio microphone back to the radio microphone's body, the muting function is deactivated.



- Slide back the lower part of the radio microphone as far as it will go.
- Open the battery compartment cover 13.
- Insert the batteries or the BA 2015 accupack as shown on the battery compartment cover. Observe correct polarity when inserting the batteries/accupack.



- Close the battery compartment cover 13.
- Push the battery compartment into the radio microphone's body.
- Screw the lower part of the radio microphone back to the radio microphone's body 3.

Charging the accupack

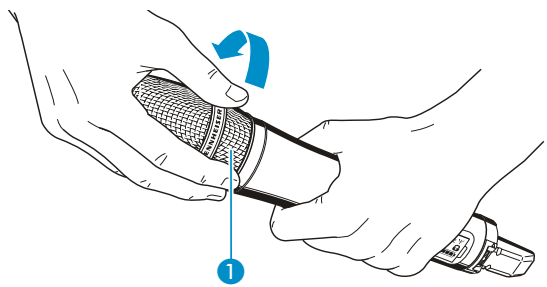
To charge the radio microphone with the inserted BA 2015 accupack (optional accessory):

- Use the LA 2 charging adapter to insert the radio microphone into the L 2015 charger (both the charger and the charging adapter are available as optional accessories).

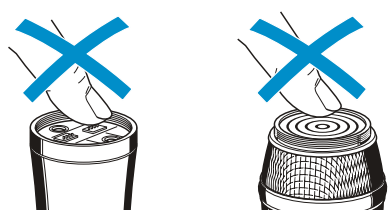
Changing the microphone head

The microphone head is easy to change.

- Unscrew the microphone head.



Do not touch the contacts of the radio microphone nor the contacts of the microphone head. The contacts can become dirty or damaged if touched.



When unscrewing the microphone head during operation, the muting function is automatically activated. "MUTE" appears on the display panel.

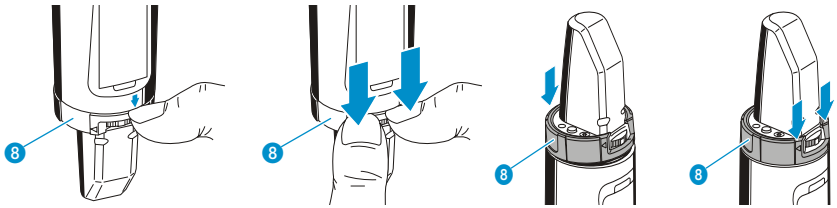
When screwing the microphone head back to the radio microphone, the muting function is deactivated.

- Screw the desired microphone head to the radio microphone.
- Put the radio microphone back into operation.

Changing the color-coded protection ring

The color-coded protection ring 8 prevents the multi-function switch 11 from accidental operation. Protection rings in different colors are available as accessories. The protection rings allow you to clearly identify each radio microphone.

- Remove the color-coded protection ring as shown in the left-hand diagram.
- Put on a new protection ring as shown in the right-hand diagram.



Using the devices

To establish a transmission link, proceed as follows:

1. Switch the receiver on.
2. Switch a transmitter on.
   The transmission link is established and the receiver's RF level display "RF" reacts.

If you cannot establish a transmission link between transmitter and receiver:

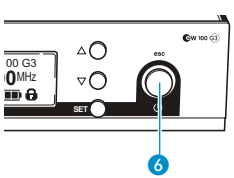
- Make sure that transmitter and receiver are set to the same frequency bank and to the same channel.
- If necessary, read the chapter "If a problem occurs ..." on page 28.

It is vital to observe the following notes:

- Make sure that the desired frequencies are listed in the enclosed frequency information sheet.
- Make sure that the desired frequencies are approved and legal in your country and, if necessary, apply for an operating license.

Switching the devices on/off

EM 100 receiver



To switch the receiver on:

- Briefly press the STANDBY button 6.
  The receiver switches on and the "Receiver Parameters" standard display appears.

To switch the receiver to standby mode:

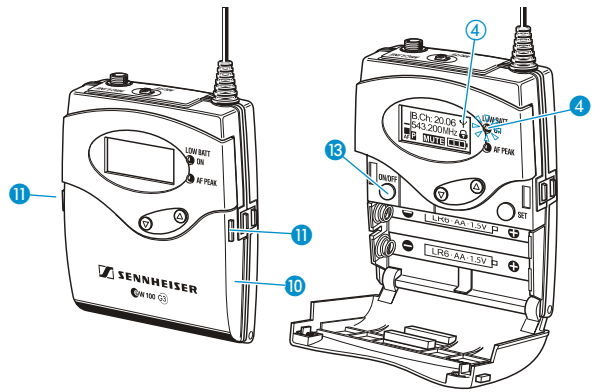
- If necessary, deactivate the lock mode (see page 21).
- Keep the STANDBY button 6 pressed until "OFF" appears on the display panel.

When in the operating menu, pressing the STANDBY button 6 will cancel your entry (ESC function) and return you to the current standard display.

To completely switch the receiver off:

▶ Disconnect the receiver from the mains by unplugging the mains unit from the wall socket.

SK 100 bodypack transmitter



To switch the bodypack transmitter on (online operation):

▶ Push the two catches ⑪ and open the battery compartment cover ⑩.

ON/OFF

▶ Briefly press the ON/OFF button ⑬.
The bodypack transmitter transmits an RF signal. The transmission icon ④ is displayed.
The red ON LED ④ lights up and the standard display "Frequency/Name" appears on the display panel.

You can switch the bodypack transmitter on and deactivate the RF signal on switch-on. For more information, see below.

To switch the bodypack transmitter off:

▶ If necessary, deactivate the lock mode (see page 21).

ON/OFF

▶ Press the ON/OFF button ⑬ until "OFF" appears on the display panel. The red ON LED ④ goes off and the display panel turns off.

When in the operating menu, pressing the ON/OFF button ⑬ will cancel your entry (ESC function) and return you to the current standard display.

To switch the bodypack transmitter on and to deactivate the RF signal on switch-on (offline operation):

ON/OFF

▶ Press the ON/OFF button ⑬ until "RF Mute On?" appears on the display panel.

SET

▶ Press the SET button ⑦.
The transmission frequency is displayed but the bodypack transmitter does not transmit an RF signal. The transmission icon ④ is not displayed.

Use this function to save battery power or to prepare a bodypack transmitter for use during live operation without causing interference to existing transmission links.

To activate the RF signal:

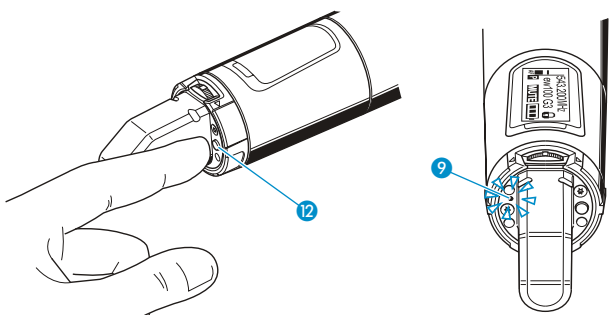
ON/OFF

▶ Briefly press the ON/OFF button ⑬.
"RF Mute Off" appears on the display panel.

SET

▶ Press the SET button ⑦.
The transmission icon ④ is displayed again.

SKM 100 radio microphone



To switch the radio microphone on (online operation):

ON/OFF

▶ Briefly press the ON/OFF button ⑫.
The radio microphone transmits an RF signal. The transmission icon ④ is displayed. The red ON LED ⑨ lights up and the standard display "Frequency/Name" appears on the display panel.

You can switch the radio microphone on and deactivate the RF signal on switch-on. For more information, see below.

To switch the radio microphone off:

▶ If necessary, deactivate the lock mode (see page 21).

ON/OFF

▶ Press the ON/OFF button ⑫ until "OFF" appears on the display panel. The red ON LED ⑨ goes off and the display panel turns off.

When in the operating menu, pressing the ON/OFF button ⑫ will cancel your entry (ESC function) and return you to the current standard display.

To switch the radio microphone on and to deactivate the RF signal on switch-on (offline operation):

ON/OFF

▶ Press the ON/OFF button ⑫ until "RF Mute On?" appears on the display panel.

▶ Press the multi-function switch ⑪.
The transmission frequency is displayed but the radio microphone does not transmit an RF signal. The transmission icon ④ is not displayed.

Use this function to save battery power or to prepare a radio microphone for use during live operation without causing interference to existing transmission links.

To activate the RF signal:

ON/OFF

▶ Briefly press the ON/OFF button ⑫.
"RF Mute Off" appears on the display panel.

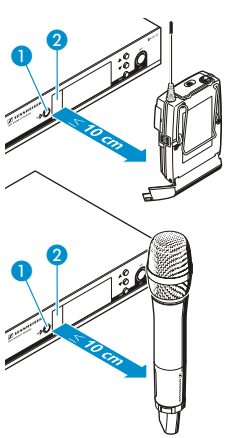
▶ Press the multi-function switch ⑪.
The transmission icon ④ is displayed again.

sync Synchronizing a transmitter with the receiver

You can synchronize a suitable transmitter of the ew 100 G3 series with the receiver. During synchronization, the following parameters are transferred to the transmitter:

Setting	Transferred parameters
"Frequency Preset"	Currently set frequency
"Name"	Freely selectable name currently set on the receiver
"Pilot Tone"	Current pilot tone setting of the receiver ("Inactive"/"Active")

To transfer the parameters:



▶ Switch the transmitter and the receiver on.

▶ Press the sync button ① on the receiver.
"Sync" appears on the display panel of the receiver.

▶ Place the infra-red interface of the transmitter (see page 7 and 9) in front of the infra-red interface of the receiver ②.
The parameters are transferred to the transmitter. When the transfer is completed, "✓" appears on the display panel. The receiver then switches back to the current standard display.

To cancel the transfer:

▶ Press the STANDBY button on the receiver.

"X" appears on the display panel of the receiver. "X" also appears if:

- no transmitter was found or the transmitter is not compatible,
- no transmitter was found and the synchronization process was canceled after 30 seconds,
- you canceled the transfer.

Deactivating the lock mode temporarily

You can activate or deactivate the automatic lock mode via the "Auto Lock" menu item (see page 25). If the lock mode is activated, you have to temporarily deactivate it In order to be able to operate the devices:

EM 100

▶ Press the UP/DOWN button.
"Unlock?" appears on the display panel.

▶ Press the SET button.
The lock mode is temporarily deactivated (see below).

SK 100

▶ Press the rocker button.
"Unlock?" appears on the display panel.

▶ Press the SET button.
The lock mode is temporarily deactivated (see below).

SKM 100

▶ Move the multi-function switch upwards/downwards.
"Unlock?" appears on the display panel.

▶ Press the multi-function switch.
The lock mode is temporarily deactivated (see below).

How you are using the devices determines how long the lock mode remains deactivated:

When in the operating menu
The lock mode is deactivated as long as you are working with the operating menu.

When one of the standard displays is shown
The lock mode is automatically activated after 10 seconds.

Prior to this, the lock mode icon flashes, indicating that the lock mode is being activated.

Muting the audio signal or deactivating the RF signal

EM 100

To mute the audio signal:

- When one of the standard displays is shown on the display panel, press the STANDBY button.
  "RX Mute On?" appears on the display panel.

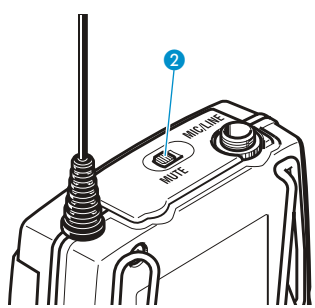
- Press the SET button.
  The audio signal is muted.

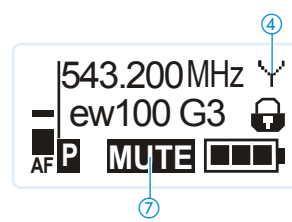
To unmute the audio signal:

- Press the STANDBY button.
  "RX Mute Off?" appears on the display panel.

- Press the SET button.
  The muting is canceled.

SK 100





The MUTE switch 2 allows you to mute the audio signal or to deactivate the RF signal. Via the "Mute Mode" menu item, you can set the desired function of the MUTE switch 2:

Setting	Slide the MUTE switch 2 ...	Function
"Disabled"	... to the left (position MUTE)	None
"RF On/Off"	... to the left (position MUTE)	Deactivates the RF signal (offline operation)
	... to the right	Activates the RF signal (online operation)
"AF On/Off"	... to the left (position MUTE)	Mutes the audio signal
	... to the right	Unmutes the audio signal

- From the "Mute Mode" menu item, select the desired setting (see page 27).
- Exit the operating menu.
- Slide the MUTE switch 2 to the left, to the position MUTE.
  The bodypack transmitter reacts as indicated in the table.

The current state of the muting function or the RF signal is displayed on the display panel of the bodypack transmitter.

Audio signal is muted	
Transmitter's display panel:	"MUTE" ⑦ is displayed

Audio signal is activated (muting is canceled)	
Transmitter's display panel:	"MUTE" ⑦ is not displayed

RF signal is deactivated	
Transmitter's display panel:	Transmission icon ④ is not displayed

RF signal is activated	
Transmitter's display panel:	Transmission icon ④ is displayed

You can also deactivate the RF signal on switch-on. For more information, refer to the chapter "Switching the devices on/off" on page 18.

Using the ON/OFF button, you can also activate/deactivate the RF signal during operation. To do so, briefly press the ON/OFF button and proceed as described on 18.

SKM 100

You can deactivate the RF signal on switch-on. For more information, refer to the chapter "Switching the devices on/off" on 20.

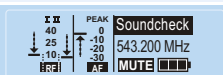
To deactivate the RF signal during operation:

- When one of the standard displays is shown on the display panel, press the ON/OFF button.
  "RX Mute On?" appears on the display panel.
- Proceed as described on 20.

Selecting a standard display

EM 100

▶ Press the UP/DOWN button to select a standard display:

Contents of the display	Selectable standard display
	"Receiver Parameters" appears after switch-on of the receiver and displays the receiver parameters (see page 5).
	"Soundcheck" (display with additional function) displays the signal quality within the transmission area.
	"Guitar Tuner" (display with additional function) displays the guitar tuner.*

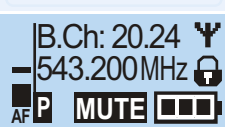
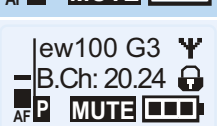
* The "Guitar Tuner" standard display is deactivated upon delivery. To show this standard display, you have to activate it (see page 26).

Information on the soundcheck function and the guitar tuner function can be found in the instruction manual of the EM 100 receiver available on the ew G3 product page at www.sennheiser.com.

SK 100 and SKM 100

To select a standard display:

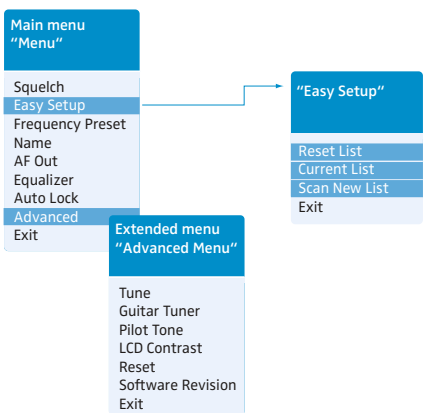
SK 100	SKM 100
Press the rocker button	Move the multi-function switch

Contents of the display	Selectable standard display
	"Frequency/Name"
	"Channel/Frequency"
	"Channel/Name"

Overview of the operating menus

For more detailed information on the operating menus, refer to the individual instruction manuals of the devices. These instruction manuals can be downloaded from the respective product pages at www.sennheiser.com.

EM 100



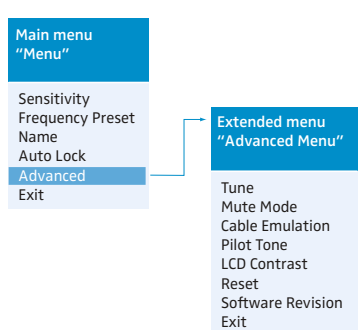
When one of the standard displays is shown on the display panel, you can get into the main menu by pressing the SET button 4. The extended menu "Advanced Menu" and the submenu "Easy Setup" can be accessed via the corresponding menu items.

Display	Function of the menu item
Main menu "Menu"	
Squelch	Adjusts the squelch threshold Adjustment range: adjustable in three steps "Low", "Middle", "High" Special function (for servicing purposes only): With the squelch threshold set to "Low", you switch the squelch off by keeping the DOWN 5 pressed. If you then press the UP button 5, you switch the squelch on again. **CAUTION!** **Danger of hearing damage and material damage!** If you switch the squelch off or adjust the squelch threshold to a very low value, loud hissing noise can occur in the receiver. The hissing noise can be loud enough to cause hearing damage or overload the loudspeakers of your system! ▶ Always make sure that the squelch is switched on (see above). ▶ Before adjusting the squelch threshold, set the volume of the audio output level to the minimum. ▶ Never change the squelch threshold during a live transmission.

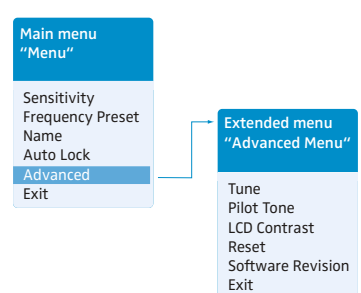
Display	Function of the menu item
Easy Setup	Scans for unused frequency presets, releases and selects frequency presets
Frequency Preset	Changes the frequency bank and the channel
Name	Enters a freely selectable name
AF Out	Adjusts the audio output level Adjustment range: -24 dB to +24 dB, adjustable in 3-dB steps, 6 dB gain reserve Special function "gain reserve": When you have adjusted a level of +18 dB, press the UP button 5 until the next higher value appears.
Equalizer	Changes the frequency response of the output signal
Auto Lock	Activates/deactivates the automatic lock mode
Advanced	Calls up the extended menu "Advanced Menu"
Exit	Exits the operating menu and returns to the current standard display
„Easy Setup"	
Reset List	Releases all locked frequency presets and selects an unused frequency preset
Current List	Selects an unused frequency preset
Scan New List	Scans for unused receiving frequencies (frequency preset scan)
Exit	Exits the submenu "Easy Setup" and returns to the main menu
Extended menu "Advanced Menu"	
Tune	Sets the receiving frequencies for the frequency bank "U"
	Special function: Sets a channel and a receiving frequency for the frequency bank "U": Select this menu item and call it up by pressing the SET button 4 until the channel selection appears.
Guitar Tuner	Selects the mode of the guitar tuner function
Pilot Tone	Activates/deactivates the pilot tone evaluation
LCD Contrast	Adjusts the contrast of the display panel
Reset	Resets the receiver
Software Revision	Displays the current software revision
Exit	Exits the extended menu "Advanced Menu" and returns to the main menu

SK 100 and SKM 100

SK 100



SKM 100



Display	Function of the menu item
Main menu	
Sensitivity	Adjusts the sensitivity "AF"
Frequency Preset*	Changes the frequency bank and the channel
Name*	Enters a freely selectable name
Auto Lock	Activates/deactivates the automatic lock mode
Advanced	Calls up the extended menu "Advanced Menu"
Exit	Exits the operating menu and returns to the current standard display
Extended menu "Advanced Menu"	
Tune	Sets the transmission frequencies for the frequency bank "U"
	Special function: Sets a channel and a transmission frequency for the frequency bank "U" ▶ Select this menu item and call it up by pressing the SET button (SK)/the multi-function switch (SKM) until the channel selection appears.
Mute Mode (SK only)	Sets the mode for the MUTE switch
Cable Emulation (SK only)	Emulates guitar cable lengths/guitar cable capacities
Pilot Tone*	Activates/deactivates the pilot tone transmission
LCD Contrast	Adjusts the contrast of the display panel
Reset	Resets the bodypack transmitter/radio microphone
Software Revision	Displays the current software revision
Exit	Exits the extended menu "Advanced Menu" and returns to the main menu

* For information on the sychronization of transmitters with receivers, refer to 20.

Cleaning the devices

CAUTION!

Liquids can damage the electronics of the devices!

Liquids entering the housing of the devices can cause a short-circuit and damage the electronics.

▶ Keep all liquids away from the devices.

EM 100

▶ Before cleaning, disconnect the device from the mains.

▶ Use a slightly damp cloth to clean the receiver from time to time. Do not use any solvents or cleansing agents.

SK 100

▶ Use a slightly damp cloth to clean the bodypack transmitter from time to time. Do not use any solvents or cleansing agents.

SKM 100

▶ Use a slightly damp cloth to clean the radio microphone from time to time. Do not use any solvents or cleansing agents.

To clean the radio microphone's sound inlet basket (MMD 835-1, MMD 845-1, MMD 935-1, MMD 945-1, MME 865-1):

- Unscrew the upper sound inlet basket from the microphone head by turning it counter-clockwise.

CAUTION!

Liquids can damage the microphone head!

Liquids can damage the microphone head.

- Only clean the upper sound inlet basket.

- Remove the foam insert.
- There are two ways to clean the sound inlet basket:
  - Use a slightly damp cloth to clean the upper sound inlet basket from the inside and outside
  - or scrub with a brush and rinse with clear water.
- If necessary, clean the foam insert with a mild detergent or replace the foam insert.
- Dry the upper sound inlet basket.
- Dry the foam insert.
- Reinsert the foam insert.
- Replace the sound inlet basket on the microphone head and screw it tight.

You should also clean the contact rings of the microphone head from time to time:

- Wipe the contact rings of the microphone head with a dry cloth.

For information on cleaning the MMK 965-1 microphone head, refer to its instruction manual.

If a problem occurs ...

EM 100

Problem	Possible cause	Possible solution
Receiver cannot be operated, "Locked" appears on the display panel	Lock mode is activated	Deactivate the lock mode (see page 21).
No operation indication	No mains connection	Check the connections of the mains unit.
No RF signal	Transmitter and receiver are not on the same channel	Set the transmitter and receiver to the same channel. To do so, use the synchronization function (see page 20)
	Transmitter is out of range	Check the squelch threshold setting (see page 25).
		Reduce the distance between transmitter and receiving antennas.

Problem	Possible cause	Possible solution
RF signal available, no audio signal, "MUTE" appears on the display panel	Transmitter is muted ("MUTE") or transmitter doesn't transmit a pilot tone	Cancels the muting (see page 22).
		Switch the pilot tone transmission on the transmitter on (see page 27).
		Switch the pilot tone evaluation on the receiver off (see page 26).
	Receiver's squelch threshold is adjusted too high	Reduce the squelch threshold (see page 25).
		Reposition the antennas.
Audio signal has a high level of background noise	Transmitter sensitivity is adjusted too low/high	Adjust the transmitter sensitivity correctly ("Sensitivity", see page 27).
Audio signal is distorted	Transmitter sensitivity is adjusted too high	Adjust the transmitter sensitivity correctly ("Sensitivity", see page 27).
	Receiver's audio output level is adjusted too high	Reduce the audio output level ("AF Out", see page 26).
No access to a certain channel	During scanning, an RF signal has been detected on this channel and the channel has been locked	Set the transmitter operating on this channel to a different channel and redo the frequency preset scan (see page 26).
	During scanning, a transmitter of your system operating on this channel has not been switched off	Switch the transmitter off and redo the frequency preset scan (see page 26).
None of the diversity displays I or II appears on the display panel	Receiver's squelch threshold is adjusted too high	Reduce the squelch threshold (see page 25).
	Transmitter's RF signal is too weak	Increase the transmission power of the transmitter. Reduce the distance between transmitter and receiver.
	Antennas are not connected correctly	Check the antenna cables or the antennas.
During the soundcheck, only one diversity display (I or II) appears on the display panel	One of the antennas is not connected correctly	Check the antenna cable or the antenna.
	Antennas are not optimally positioned	Reposition the antennas.

SK 100 and SKM 100

Problem	Possible cause	Possible solution
Devices cannot be operated, "Locked" appears on the display panel	Lock mode is activated	Deactivate the lock mode (see page 21).
No operation indication	Batteries are flat or accupack is flat	Replace the batteries or recharge the accupack (see page 15).

Problem	Possible cause	Possible solution
No RF signal at the receiver	Bodypack transmitter/radio microphone and receiver are not on the same channel	Synchronize the bodypack transmitter/radio microphone with the receiver (see page 20).
		Set the bodypack transmitter/radio microphone to the same channel as the receiver.
	Bodypack transmitter/radio microphone is out of range	Check the squelch threshold setting on the receiver.
		Reduce the distance between bodypack transmitter/radio microphone and receiving antenna.
	RF signal is deactivated ("RF Mute")	Activate the RF signal (see page 23).
RF signal available, no audio signal, "MUTE" appears on the display panel of the receiver	Bodypack transmitter/radio microphone is muted (MUTE)	Cancels the muting (see page 22).
	Receiver's squelch threshold is adjusted too high	Reduce the squelch threshold setting on the receiver.
	Bodypack transmitter/radio microphone doesn't transmit a pilot tone	Activate or deactivate the pilot tone transmission (see page 27).
Audio signal has a high level of background noise or is distorted	Bodypack transmitter's/radio microphone's sensitivity is adjusted too low/ too high	Adjust the input sensitivity (see page 27).

If a problem occurs that is not listed in the above table or if the problem cannot be solved with the proposed solutions, please contact your local Sennheiser partner for assistance. To find a Sennheiser partner in your country, search at www.sennheiser.com under "Service & Support".

Specifications

EM 100

RF characteristics

Modulation	wideband FM
Receiving frequency ranges	516–558, 566–608, 626–668, 734–776, 780–822, 823–865 MHz (A to E, G, see page 4)
Receiving frequencies	1,680 frequencies, tuneable in steps of 25 kHz
	20 frequency banks, each with up to 12 factory-preset channels, intermodulation-free
	1 frequency bank with up to 12 user programmable channels
Switching bandwidth	42 MHz
Nominal/peak deviation	±24 kHz / ±48 kHz
Receiver principle	true diversity
Sensitivity (with HDX, peak deviation)	< 2,5 µV for 52 dBA $_{\text{rms S/N}}$
Adjacent channel rejection	typ. ≥ 65 dB
Intermodulation attenuation	typ. ≥ 65 dB
Blocking	≥ 70 dB
Squelch	Off, Low: 5 dBµV, Middle: 15 dBµV, High: 25 dBµV
Pilot tone squelch	can be switched off
Antenna inputs	2 BNC sockets

AF characteristics

Compander system	Sennheiser HDX
EQ presets (switchable, affect the line and monitor outputs):	
Preset 1: "Flat"	
Preset 2: "Low Cut"	–3 dB at 180 Hz
Preset 3: "Low Cut/High Boost"	–3 dB at 180 Hz +6 dB at 10 kHz
Preset 3: "High Boost"	+6 dB at 10 kHz
S/N ratio (1 mV, peak deviation)	≥ 110 dBA
THD	≤0.9%
AF output voltage (at peak deviation, 1 kHz AF)	¼'' (6.3 mm) jack socket (unbalanced): +12 dBu XLR socket (balanced): +18 dBu
Adjustment range of audio output level	48 dB (in steps of 3 dB) +6 dB gain reserve

Overall device

Temperature range	–10°C to +55°C
Power supply	12 V ⎓
Current consumption	300 mA
Dimensions	approx. 190 x 212 x 43 mm
Weight	approx. 980 g

In compliance with (EM)

Europe:	CE	EMC	EN 301489-1/-9
		Radio	EN 300422-1/-2
		Safety	EN 60065
USA:	FC	47 CFR 15 subpart B	

Approved by

Canada:	Industry Canada	RSS 210,	IC: 2099A-G3EM100

Mains unit*	NT 2–1	NT 2–3
Input voltage	110 V~ or 230 V~, 50/60 Hz	100 to 240 V~, 50/60 Hz
Power/current consumption	9 VA	max. 120 mA
Output voltage	13 V ⎓	12 V ⎓
Secondary output current	300 mA	400 mA
Temperature range	–10 °C to +40 °C	–10 °C to +40 °C

* depending on country variant

In compliance with

Europe:	CE	EMC	NT 2-3: EN 55022, EN 55024, EN 55014-1/-2
			NT 2-1: EN 55013, EN 55020, EN 55014-1/-2
		Safety	EN 60065
USA:	FC	47 CFR 15 subpart B	
Canada:		ICES 003	

Certified by cCSAus KL, 60065, CSA.

For accessories and information on connector assignment, visit the ew G3 product page at www.sennheiser.com.

SK 100 and SKM 100

RF characteristics

Modulation	wideband FM
Frequency ranges	516–558, 566–608, 626–668, 734–776, 780–822, 823–865 MHz (A to E, G, see page 4)
Transmission frequencies	1,680 frequencies, tuneable in steps of 25 kHz
	20 frequency banks, each with up to 12 factory-preset channels, intermodulation-free
	1 frequency bank with up to 12 user programmable channels
Switching bandwidth	42 MHz
Nominal/peak deviation	±24 kHz / ±48 kHz
Frequency stability	≤±15 ppm
RF output power at 50 Ω	typ. 30 mW
Pilot tone squelch	can be switched off

AF characteristics

Compander system	Sennheiser HDX
AF frequency response	
SK	microphone: 80–18,000 Hz line: 25–18,000 Hz
SKM	80–18,000 Hz
S/N ratio (1 mV, peak deviation)	≥ 110 dBA
THD	≤0.9 %
Max. input voltage (SK) microphone/line	3 V_{rms}
Input impedance (SK) microphone/line	40 kΩ, unbalanced/1 MΩ
Input capacitance (SK)	switchable
Adjustment range of input sensitivity	SK: 60 dB, adjustable in steps of 3 dB SKM: 48 dB, adjustable in steps of 6 dB

Overall device

Temperature range	–10 °C to +55 °C
Power supply	2 AA size batteries, 1.5 V or BA 2015 accupack
Nominal voltage	2.4 V ⎓
Current consumption:	
• at nominal voltage	typ. 180 mA (30 mW)
• with switched-off transmitter	≤25 µA
Operating time	typ. 8 hrs
Dimensions	SK: approx. 82 x 64 x 24 mm SKM: approx. ∅ 50 x 265 mm
Weight (incl. batteries)	SK: approx. 160 g SKM: approx. 450 g

In compliance with (SK and SKM)

Europe:	CE	EMC: EN 301489-1/-9 Radio: EN 300422-1/-2 Safety: EN 60065, EN 62311 (SAR)

Approved by (SK)

Canada:	Industry Canada RSS 210, IC 2099A-G3SK limited to 806 MHz
USA:	FCC-Part 74, FCC-ID: DMO G3SK limited to 698 MHz

Approved by (SKM)

Canada:	Industry Canada RSS 210, IC: 2099A-G3SKMEM limited to 806 MHz
USA:	FCC-Part 74, FCC-ID: DMO G3SKMEM limited to 698 MHz

Microphones (SK 100)

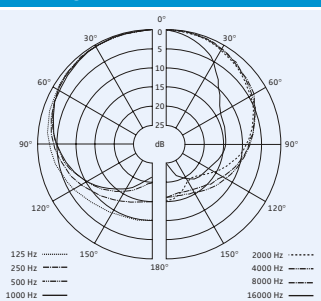
	ME 2	ME 3	ME 4
Microphone type	condenser	condenser	condenser
Sensitivity	20 mV/Pa	1.6 mV/Pa	40 mV/Pa
Pick-up pattern	omni-directional	cardioid	cardioid
Max. SPL	130 dB SPL	150 dB SPL	120 dB SPL

Microphone heads (SKM 100)

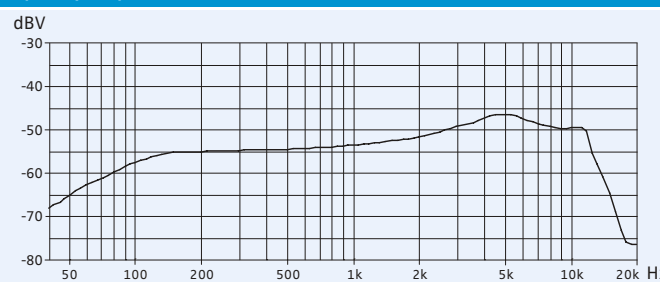
	MMD 835-1	MMD 845-1	MME 865-1
Radio microphone type	dynamic	dynamic	condenser
Sensitivity	2.1 mV/Pa	1.6 mV/Pa	1.6 mV/Pa
Pick-up pattern	cardioid	super-cardioid	super-cardioid
Max. SPL	154 dB SPL	154 dB SPL	152 dB SPL

Polar diagrams and frequency response curves of the microphone heads (SKM 100)

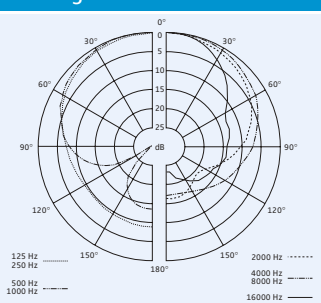
Polar diagram MMD 835-1



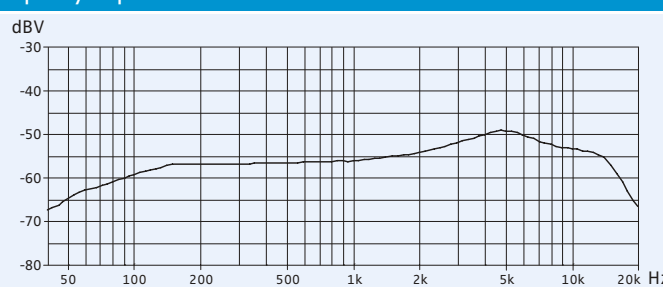
Frequency response curve MMD 835-1



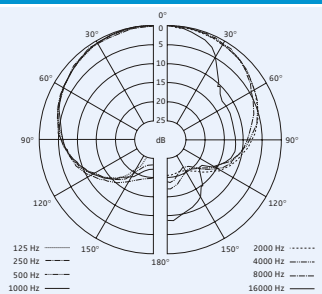
Polar diagram MMD 845-1



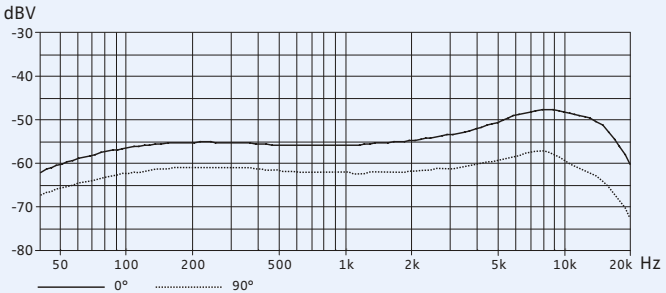
Frequency response curve MMD 845-1



Polar diagram MME 865-1



Frequency response curve MME 865-1



Manufacturer Declarations

Warranty

Sennheiser electronic GmbH & Co. KG gives a warranty of 24 months on this product.

For the current warranty conditions, please visit our web site at www.sennheiser.com or contact your Sennheiser partner.

In compliance with the following requirements

- RoHS Directive (2002/95/EU)
- WEEE Directive (2002/96/EU)

  Please dispose of these products at the end of their operational lifetime by taking it to your local collection point or recycling center for such equipment.

- Battery Directive (2006/66/EU)

  The supplied batteries or rechargeable batteries of the transmitters can be recycled. Please dispose of them as special waste or return them to your specialist dealer. In order to protect the environment, only dispose of exhausted batteries.

CE Declaration of Conformity

- EM 100: CE 0682 SK / SKM 100: CE 0682 ⓘ
- R&TTE Directive (1999/5/EU), EMC Directive (2004/108/EU), Low Voltage Directive (2006/95/EU)
  The declarations are available at www.sennheiser.com. Before putting the devices into operation, please observe the respective country-specific regulations.

Statements regarding FCC and Industry Canada

These devices comply with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) these devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

These class B digital devices comply with the Canadian ICES-003.

Changes or modifications made to this equipment not expressly approved by Sennheiser electronic Corp. may void the FCC authorization to operate this equipment.

Before putting the devices into operation, please observe the respective country-specific regulations!

Sennheiser electronic GmbH & Co. KG
Am Labor 1, 30900 Wedemark, Germany
www.sennheiser.com

Printed in Germany
Publ. 01/09
529659/A01

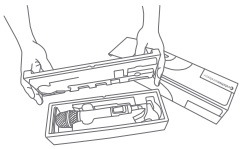
evolution wireless G3

SENNHEISER

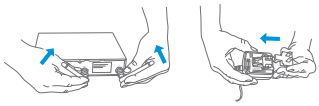
evolution wireless G3 QUICK START GUIDE

PREPARING DEVICE FOR USE

1. Unpack items from carton

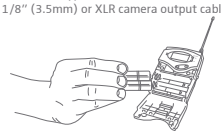


2. (This step for EM units only) Attach antennas and place in a "V" shape. Insert country tip into AC adapter, it will slide in and make a positive "click". Insert yellow plug into back of EM receiver unit.



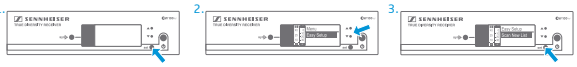
3. Plug in lavalier microphone, headset mic, or guitar cable into bodypack transmitter and secure by gently tightening the locking ring (if applicable)

4. Insert 2 x AA (UM3) batteries into the transmitter (bodypack or handheld), observing polarity. (Camera sets only): Insert 2 x AA batteries into receiver bodypack (EK100G3). Connect either the 1/8" (3.5mm) or XLR camera output cable



FREQUENCY SCAN

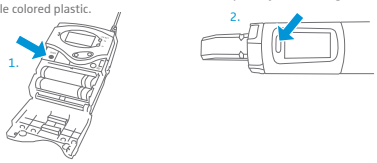
1. Power on the receiver (EM or EK unit) by pressing the ON/OFF button. On the receiver, press SET to activate the menu. Press up/down buttons to select "Easy Setup". Press SET and choose "Scan New List." Press SET once more to start scan.



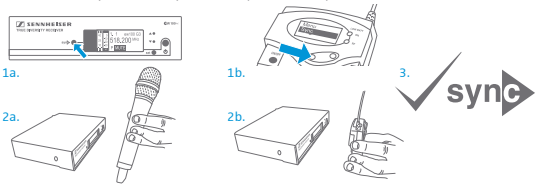
2. After the scan is completed (about 60 seconds) the receiver will suggest a BANK to choose with the most free channels by placing the cursor over it. Press SET to confirm this BANK. Now select a channel using the up/down arrows and press SET to confirm. The receiver will now say "STORED."

3. Tap ON/OFF to exit the menu. The frequency chosen will be displayed. You should see zero RF/AF activity on the meter (indicating you are on a free channel).

4. Power up the transmitter (SK, SKM) you wish to pair with the receiver. Become familiar where the infrared (IR) window is located. On a G3 handheld transmitter, the window is located on the LCD display. On a bodypack transmitter, it is located under the battery door just to the right of the ON/OFF button under a purple colored plastic.



5. Enter SYNC mode by pressing "SYNC" button (EM receivers) or selecting SYNC option from menu (EK receiver). Once the SYNC logo displays, hold the handheld or bodypack infrared window facing the left side of the receiver display about 6" away. When SYNC is successful, you will see a check mark briefly next to the SYNC logo on the receiver screen. If you see an "X" next to the SYNC logo, it indicates the sync failed and you should repeat the SYNC process.



FINAL SET-UP & TIPS

- It is suggested that you adjust the receiver (EM or EK) AF OUT setting to around 0dB for most situations. The AF OUT setting is your master ouput voume.
- The **SENSITIVITY** setting (SK and SKM transmitters only) should be adjusted so that in your loudest passages, the **AF PEAK** indicator briefly illuminates. As the **SENSITIVITY** settings move closer to "0 dB" they become louder.
- If setting up multiple systems in the same frequency range (A/B/G), you can repeat the **"EASY SETUP/SCAN NEW LIST/SYNC"** process for each system.
- Be sure to choose the same **BANK** number (but a different channel number) for units in the same frequency range in order to ensure trouble-free operation.
- It is suggested you perform the **EASY SETUP/SCAN NEW LIST** function whenever you use your unit in a different area (at a gig etc.) Open frequencies vary from one location to another.
- On the receiver: The **RF and AF** meter bars indicate status. RF (Radio Frequency) meter is akin to "bars of reception" on your cellphone. The AF (Audio Frequency) meter moves moves whenever audio is transmitted through the system.
- On portable camera sets the receiver will clip onto the included **CA2** camera shoe mount.

Sennheiser Electronic Corporation
One Enterprise Drive, Old Lyme, CT 06371
Tel: (860) 434-9190 • Fax: (860) 434-1759

www.sennheiserusa.com

WORKING WITH

evolution wireless G3

COMPREHENSIVE GUIDE
TO SETTING UP, CONFIGURING AND USING
EVOLUTION WIRELESS G3 SYSTEMS

SENNHEISER

APPLICABLE FOR USE IN THE U.S.
CONSUMER ALERT

Most users do not need a license to operate a wireless microphone system. Nevertheless, operating a microphone system without a license is subject to certain restrictions: the system may not cause harmful interference; it must operate at a low power level (not in excess of 50 milliwatts); and it has no protection from interference received from any other device. Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change. For more information, call the FCC at **1-888-CALL-FCC** (TTY: 1-888-TELL-FCC) or visit the FCC's wireless microphone website at: **www.fcc.gov/cgb/wirelessmicrophones**

Table of Contents

Introduction 4
The Building Blocks of a Wireless System 5
The Transmitter 6
The Receiver 7
Antennas 8
Wireless Monitoring Systems 9
Choosing a Wireless System 10
Selecting Systems and Components 11
Accessorizing a Wireless System 11
Operation: Frequency Considerations 12
Putting Together a System 13
- Four Channel Wireless System 13
- Eight Channel Wireless System 14
- Single Channel Wireless Monitor System 15
- Four Channel Wireless Monitor System 15

Antenna Distribution and Mounting Packages 16
Frequently Asked Questions 17
Conclusion 19
Appendix: Frequency Preset Charts 19

Visit Sennheiser's YouTube channel at:
www.youtube.com/sennheiserUSA
to watch several video clips that will help you set up and operate the evolution wireless G3 systems

Welcome to evolution wireless G3

Wireless microphone and monitoring systems have become standard equipment for musicians, broadcasters, theatre productions, television shows, and sound contractors alike. Sennheiser has been the industry leader in wireless systems for over 50 years, and is proud to bring its Emmy Award-winning advances in RF (radio frequency) to evolution wireless G3.

Sennheiser's evolution wireless G3 systems elegantly solve two classic challenges: avoiding interference and building complex, multi-channel systems. Sennheiser evolution wireless G3 offers 1,680 tunable UHF frequencies across 42 MHz and an easy-to-use "Easy Setup" function that scans for interference and recommends "free" frequencies that will yield the most reliable operation. For setting up multi-channel systems, evolution wireless G3 includes 20 banks of coordinated frequencies, each set calculated to work together without interference – an undesirable effect called intermodulation. With evolution wireless G3, building a reliable, interference-free multi-channel setup has never been easier!

From small clubs to boardrooms to Broadway stages or stadium-sized concert halls, Sennheiser evolution wireless G3 is used with confidence every day by professional users the world over.

About UHF Wireless

Sennheiser wireless systems operate in the UHF (Ultra High Frequency) range. UHF is the most common, most reliable format for wireless systems today. Within the US, wireless systems are allowed to operate from 470 – 698 MHz. Within this available spectrum, Sennheiser evolution wireless G3 systems are available in three frequency ranges: **A** (516-558 MHz), **G** (566-608 MHz), **B** (626-668 MHz)

The Building Blocks of a Wireless System

Every wireless system consists of three main components:

1) Transmitter

The transmitter accepts a (mic or line) input signal, converts it into an RF (radio frequency) signal, and then transmits it.

G3 SKM Handheld Transmitter

G3 SKP Plug-On Transmitter

G3 SK Bodypack Transmitter

2) Receiver

The receiver picks up the transmitted RF signal, converts it back into an audio signal, and then outputs it for mixing and amplification.

G3 EM Rack-Mount Receiver

G3 EK Camera-Mount Receiver

3) Antennas

Antennas handle the sending and receiving of the RF signal between the two components. Antennas may be either active or passive, depending on the system configuration.

A1031-U
Passive Omnidirectional
UHF Antenna

A2003-UHF
Passive Directional
UHF Antenna

The Transmitter

The transmitter has a fairly straightforward job: take a microphone or line-level input signal, convert it into an RF signal, and transmit it. It sounds easy, but there are a number of variables involved in producing accurate and dependable transmissions.

Professional events demand reliability and extensive operating range, regardless of conditions. Sennheiser's evolution wireless G3 transmitters meet that challenge with 30 mW of output power, which can deliver approximately 300 feet of operating range (line of sight) in a good RF environment. With rugged metal housings, G3 series transmitters are built to endure wear-and-tear, for consistent results, night after night.

To preserve every nuance of your performance, evolution wireless G3 employs a proprietary noise-reduction system called HDX™, which maximizes audio quality and avoids the noise inherent in most RF systems. HDX™ converts the analog audio signal to RF and back to analog again, all with stunning accuracy and quality. With a wide frequency response of 25 Hz to 18 kHz (line), evolution wireless G3 sounds as good as our wired microphones.

There are three basic types of wireless transmitters:

1) Handheld transmitters

Handhelds are the most recognizable form of transmitter, most closely resembling traditional wired microphones. All evolution wireless G3 handheld transmitters (SKM 100 G3, SKM 300 G3, and SKM 500 G3) are designed to offer exceptional sound, with user-swappable dynamic and condenser capsules from our evolution 800 (e835, e845, e865) and 900 (e935, e945, e965) series wired microphones.

G3 Handheld Transmitter

2) Bodypack transmitters

Sennheiser evolution wireless G3 bodypack transmitters (SK 100 G3, SK 300 G3, and SK 500 G3) offer adjustable input sensitivity control to complement a wide range of lavalier microphones (ME2 omni, ME4 cardioid, MKE 2 Gold omni), headmics (ME3-ew, HSP4-ew, Ear Set 4-ew), or line-level signals such as electric guitars and basses. With compact, rugged designs, bodypack transmitters are commonly used in musicals, theatrical stages, film and television sets.

ME3 Headset Mic

ME2 and 4 Lavalier Mics

G3 Bodypack Transmitter

3) Plug-on transmitters

Plug-on transmitters are often used on location news-casts, reality TV, and movie sets to convert traditional wired microphones or line level signals into wireless devices. The SKP 100 G3 plug-on is ideal suited for dynamic mics, such as the MD 42 or MD 46. For condenser mics requiring 48v phantom power, such as the MKH 416 shotgun microphone, Sennheiser also offers the phantom power-equipped SKP 300 G3.

G3 Plug-On Transmitter

Sennheiser's G3 portable transmitters can operate for up to 8 hours on a pair of AA batteries. Audio and RF transmission quality is never compromised as batteries run down, thanks to dedicated circuitry that maintains a constant internal system voltage. G3 transmitters also relay battery strength to their receivers, allowing sound engineers to remotely monitor battery life at a glance. G3 handheld and bodypack transmitters also feature external charging contacts, for use with optional BA 2015 rechargeable battery packs and the L 2015 charging station.

The Receiver

The heart of every wireless system, the receiver is designed to pick up an RF signal sent from the transmitter, convert it back into an audio signal, and output it for mixing, recording, and amplification.

There are two basic types of wireless receivers:

1) Fixed (rack-mount) receivers

The most common version, G3 series fixed receivers (EM 100 G3, EM 300 G3, and EM 500 G3) are compact, half-rack sized units which can be mounted in standard 19'' equipment racks using the optional GA3 rack-mount adapter. Sennheiser employs True Diversity antenna technology in its G3 rack-mount receivers, to ensure the most stable, uninterrupted wireless reception. True Diversity receivers contain two independent tuning modules and a comparison circuit that continuously routes the stronger signal to the receiver's output. Put simply, True Diversity maximizes system reliability.

G3 Rack-mountable Receiver

G3 Portable Receiver

2) Portable (camera-mount) receivers

Portable receivers are used in film, television, and video applications to wirelessly feed audio into a video camera or other portable recording device. The EK 100 G3 portable camera-mount receiver is compact, lightweight, battery-powered, and can mount directly onto a wide variety of motion-picture or video cameras which have a standard shoe mount. Adaptive Diversity antenna technology is featured on evolution wireless G3 portable receivers to increase stability. In Adaptive Diversity, the receiver utilizes the output cable as a secondary antenna, enhancing reception and reducing dropouts.

Antennas

For basic wireless applications, the supplied antenna rods provide excellent results. For more complicated systems, remote antennas can further enhance reliability and reception.

There are two common remote antennas used for multi-channel systems:

1) Omnidirectional Antennas

Omnidirectional antennas, such as the passive A1031-U, receive or radiate UHF signals in a circular, 'donut' shaped pattern. Omnidirectional antennas are an excellent choice for indoor applications and situations where the transmitter's range of movement is unpredictable.

A1031-U

2) Directional Antennas

Directional antennas, such as the passive A2003-UHF, provide superior passive forward gain and 'reach' by suppressing unwanted RF signals from behind. Directional antennas excel in outdoor applications and situations where the transmitter's range of movement is contained to a specific area, such as a stage.

A2003-UHF

Remote antennas often enhance system performance through better placement. Stand-mountable remote antennas can be located physically higher than antenna rods, which improves line of sight and reduces disruptive reflections. Wider antenna spacing is also possible, which enhances stability by maximizing diversity. In multi-channel setups, receivers are often rack-mounted, which can place numerous metal housings in the transmission path. By relocating the antennas out of the rack, signal quality can also be significantly enhanced.

In multi-channel applications, the signal from a master pair of remote antennas can be distributed to multiple receivers simultaneously by an antenna splitter.

Active Antenna Distribution

The ASA 1 is an active, dual 1:4 splitter, capable of feeding up to four diversity receivers from a pair of master antennas. Two ASA 1s can be coupled together to feed up to eight receivers. The ASA 1 maintains unity gain by first boosting the incoming signal before passively splitting it to multiple outputs. In addition to antenna distribution, the ASA 1 also provides DC power distribution for all connected G3 series receivers, streamlining wiring by eliminating numerous individual power supplies.

ASA 1 Active Antenna Splitter

Wireless Monitoring Systems

Wireless monitor systems are quietly revolutionizing live sound. In-ear monitor receivers allow musicians to hear themselves and other instruments while performing, without the need for loud monitor wedges. Monitor systems not only reduce stage volume and the risk of feedback, they also provide freedom of movement and excellent hearing protection due to reduced listening levels.

Similar to the wireless microphone systems discussed earlier, wireless monitoring systems utilize very similar building blocks:

(Rack-mount) Transmitter:

The SR 300IEM G3 transmitter can send either a mono or stereo-multiplexed signal via a pair of balanced ¼" / XLR combination jacks. With 1,680 available UHF frequencies and easy multi-channel operation, the system can provide wireless monitoring for every performer on stage. Robust output power (30 mW) provides extended range and signal stability.

SR 300IEM G3 Transmitter

(Portable) Receiver:

The compact EK 300IEM G3 bodypack receiver provides the performer with clear, interference-resistant monitoring. A unique "Stereo / Focus" mode toggles between standard stereo monitoring and Focus (mono) mode. In Focus mode, users can freely adjust the balance of the system's two channels to create a custom monitor mix (for example, to create a balance between vocals with instrumentation). A large, easy-to-use knob allows users to control volume, while an adjustable Audio Limiter can be engaged to protect against hearing loss. Multiple receivers can receive and listen to the same signal, allowing performers to share a monitor mix.

EK 300 IEM + IE 4

The ew 300IEM G3 monitor system includes Sennheiser's high quality IE4 stereo earphones, which provide lightweight, comfortable listening. The receiver can also be used with custom ear molds (ordered separately) for the ultimate in wireless comfort, fit and performance. The EK 300IEM G3 receiver utilizes Adaptive Diversity, which uses the IE4's output cable as a secondary antenna, increasing system stability.

Antennas / Antenna Combiners:

Monitor systems use a single transmit antenna to send their signal to the receiver. The A2003-UHF passive directional antenna is an excellent choice for a remote IEM transmit antenna, particularly in situations where the performers are in a set location, such as a stage.

AC3

For larger systems, Sennheiser offers the AC3 antenna combiner, which can combine up to four transmission signals onto a single transmit antenna, greatly reducing the possibility of intermodulation.

Choosing a Wireless System

Sennheiser's evolution wireless G3 line is available in three performance grades – ew 100 G3, ew 300 G3, and ew 500 G3. All three lines are fully compatible, sharing identical RF technology with 1,680 tunable frequencies, 30 mW of output power and True Diversity reception on all rackmount receivers. Every component features Sennheiser's proprietary HDX™ compander circuitry for crystal-clear audio, and an innovative infrared sync that allows the receiver to quickly program the transmitter to a new frequency. With the press of the SYNC button, the receiver transfers the desired frequency into the transmitter, greatly simplifying the setup process.

Looking beyond the shared core RF platform, each series offers unique features that address increasingly complex multi-channel applications. The ew 100 G3 series offers streamlined, portable wireless solutions. The ew 300 G3 series enhances control with integrated mute functions and remote control over Ethernet. The ew 500 G3 series delivers with Sennheiser's top-of-the-line mic capsules and lavalier elements, for the best possible audio quality.

	EW 100 G3	EW 300 G3	EW 500 G3
Switching bandwidth	42 MHz		
Tunable frequencies	1,680		
Synchronization	Infrared		
Noise Reduction	HDX		
RF output power	30 mW	selectable 10 / 30 mW	
Frequency Banks	20 Preset (intermod free) 1 User Programmable	20 Preset (intermod free) 6 User Programmable	
Channels per Bank	12	24	32
Mic capsules (handheld)	e 800 series		e 900 series
Mic elements (lavalier)	ME 2 / ME 4		MKE 2 Gold
Audio Control (handheld)	-	Mute button on body	-
Audio Control (bodypack)	-	Optional RMS 1	-
Receiver Display	Small / 1 color	Large / 2-color	
Networkable (remote monitoring, media control)	-	Ethernet / RJ45	
Squelch	Adjustable in 3 levels (low/medium/high)	Adjustable in 2dB steps	

One of the most important considerations in selecting the right wireless series for an application is the number of channels required. G3 systems offer 20 "Banks" of coordinated frequency presets, known as "Channels." For reliable operation, all systems in a given frequency range should be set to the same Bank, each to a unique available Channel. The number of Channels per Bank increases with the series, up to 32 per bank in ew 500 G3. Larger multi-channel systems will be easier to set up and coordinate with the more advanced series, like ew 500 G3.

One of the more powerful features found in ew 300 and ew 500 G3 systems is an Ethernet RJ 45 port, which allows users to remotely program and monitor their systems using Sennheiser's Wireless Systems Manager software, on either a Mac or PC. When interconnected with an Ethernet switch, ew 300 and 500 series systems can also perform a networked Easy Setup, distributing the results of a common scan to all connected receivers - resulting in faster setup and coordination.

Selecting Systems and Components

Sennheiser offers a wide range of evolution wireless G3 systems to cover almost any wireless application, from wireless instruments to personal monitoring to portable ENG systems. G3 systems are sold in sets, containing a matched transmitter and receiver, including:

	EW 100 G3	EW 300 G3	EW 500 G3
Handheld Systems	ew 135 G3 ew 145 G3 ew 165 G3	ew 335 G3 ew 345 G3 ew 365 G3	ew 500-935 G3 ew 500-945 G3 ew 500-965 G3
Lavalier Systems	ew 112 G3 ew 122 G3	ew 312 G3 ew 322 G3	ew 512 G3
Headmic Systems	ew 152 G3	ew 352 G3	-
Instrument Systems	ew 172 G3	-	ew 572 G3
Portable / Camera Systems	ew 112P G3 ew 122P G3 ew 135P G3 ew 100 ENG G3	-	-
Monitoring Systems	-	ew 300 IEM G3 ew 300 2-IEM G3	-

Additional components can be added to enhance any system, but it is important to identify and select the matching frequency range to ensure compatibility. To help simplify the matching process, Sennheiser clearly prints the tuning range (A, G or B) on the back of all components. Transmitters and receivers must also use the same compander circuitry to provide correct audio results. Sennheiser's proprietary HDX™ circuitry is featured in all three generations of evolution wireless (G1 / G2 / G3), as well as our 2000 Series. As long as the frequency range matches, evolution wireless and 2000 Series are fully forward and backwards compatible.

Accessorizing a Wireless System

Sennheiser offers many useful accessories for evolution wireless G3 to help expand the functionality of the system. A few common accessories include:

GA3 Rack Adapter

For convenient side-by-side mounting of up to two fixed EM receivers, SR transmitters, ASA1 splitters or AC3 combiners in a standard 19" rack. Included with ew 300 G3 and ew 500 G3 systems, available separately for ew 100 G3 systems.

GA3

AM2 Front Mount Antenna Kit

For use with a rack-mounted G3 receiver, transmitter, splitter or combiner, the AM2 extends a pair of antenna rods to the half-rack front panel included in the GA3 rack-mounting kit. Front-mounting antenna rods can enhance system performance, when compared to antennas "buried" inside the rack.

AM2

RMS 1 Remote Mute Switch

For use exclusively with the SK 300 G3, the RMS 1 is a programmable remote mute switch which performs specialty applications such as press-to-talk or press-to-mute.

RMS 1

Operation: Frequency Considerations

The successful operation of an RF wireless system greatly depends on two things:

1) The frequencies used must avoid interference from competing signals, such as television broadcast.
2) The frequencies used must not interfere with each other. Selected frequencies need to be carefully calculated for sufficient spacing, and to avoid creating disruptive interference known as intermodulation.

Geographic location plays a major role in the performance of your wireless system. The primary source of competition is television broadcast transmission towers. It is likely that one or more television stations will be broadcasting within range of your wireless system, creating sources of interference. In planning your systems' frequency requirements, it is advisable to determine what frequencies are in use by local television stations. Sennheiser's website, www.sennheiserUSA.com, has an interactive Frequency Finder which can assist in identifying the local TV stations broadcasting in your area.

Local television stations are not the only source of interference, so having a complete knowledge of your RF environment is an important step in planning your wireless microphone system.

To provide users with additional flexibility to avoid interference, evolution wireless G3 systems are available in three distinct frequency ranges (A, G, B). Each range contains 1,680 user-selectable frequencies and 20 "Banks" of coordinated frequency presets, known as "Channels." For proper multi-channel setup, all units in a frequency range should be set to the same Bank, each to a different available Channel.

All G3 systems include an easy-to-use EASY SETUP process, which ensures your units are set to fully compatible frequencies that avoid local interference.

Easy Setup / Scan New List:

1. On the receiver, press SET to enter menu. Press up/down buttons to select "Easy Setup". Press SET and choose "Scan New List." Press SET to start scan.
2. After the scan is complete, the receiver will recommend the "Bank" with the most "Channels" free. Press SET. Select a Channel using the up/down arrows and press SET to confirm. The receiver will say "STORED."
3. Tap the POWER button to exit the menu. The new selected frequency will be displayed. You should see little to no RF activity on the meter (meaning, you are on a free channel).
4. Power up the transmitter you wish to pair with the receiver. Locate the transmitter's infrared (IR) port. On a G3 handheld transmitter, the port is located on the LCD display. On a bodypack transmitter, it is located inside the battery compartment, to the right of the ON/OFF button.
5. For a rack-mount (EM) receiver, press the "SYNC" button on the front of the receiver. On a portable (EK) receiver, press SET and use the up/down button to find "Sync." Press SET. Hold the transmitter's IR port in front of the receiver's IR port, which is located on the left side of the display. Be sure to align the IR ports so they face each other, approximately 1" to 2" apart.
6. If the SYNC is successful, you will see a "✓" on the receiver screen. If you see an "X", SYNC failed and you should repeat step 5.
7. After a successful SYNC, you should see the same frequency displayed on both the receiver and transmitter.
8. If setting up another system in the same frequency range (A/B/G), you can repeat the process from Step 1. Make sure to choose the same BANK number as you did in step 2 to ensure compatible operation, and a different channel number.

Putting Together a System

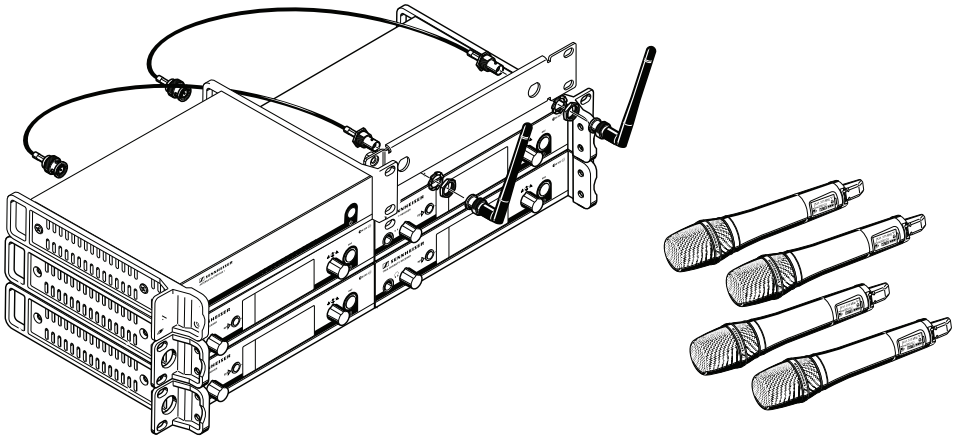
Following are diagrams of several typical wireless microphone and wireless monitor systems.

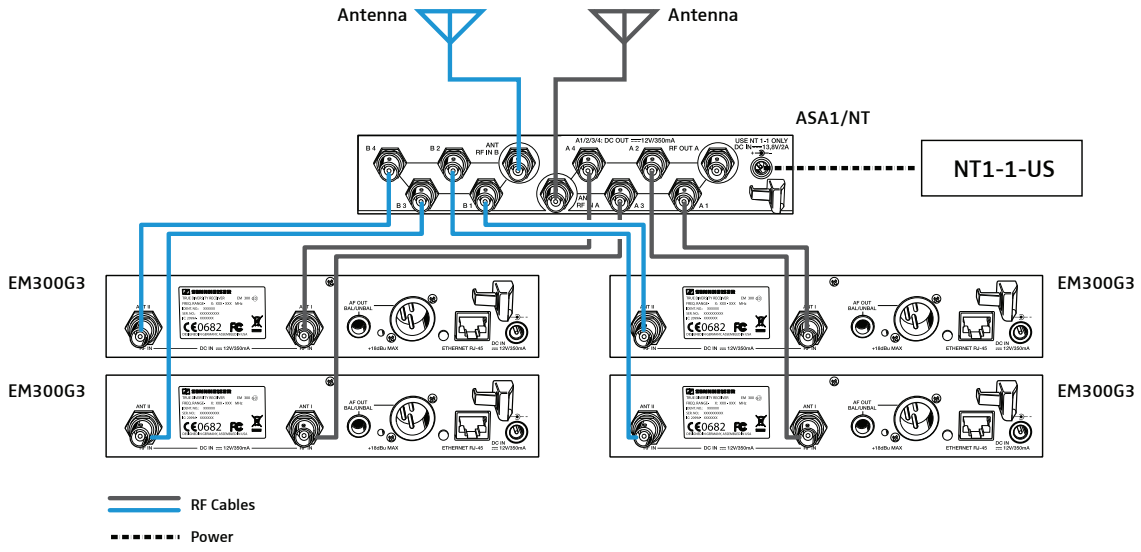
NOTE:** For systems larger than 8 channels, we recommend using Sennheiser's 2000 Series wireless:* ***www.sennheiserUSA.com/2000Series

Four Channel Wireless System

(4 Handheld Systems)

Qty	Model	Description
4	ew 335 G3	Handheld Systems w/MMD 835-1 capsules
1	G3 Front Kit 4	Active splitter kit for four receiver system using front-mount antennas, includes ASA1/NT, GA3, AM2





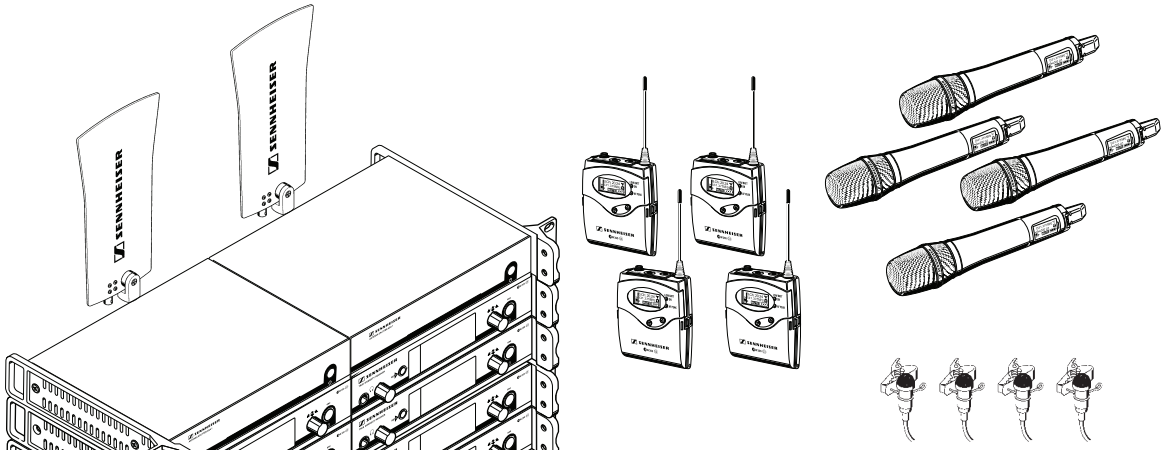
PRO TIP: DC Power for (EM) receivers is provided via the "A" Outputs

Eight Channel Wireless System

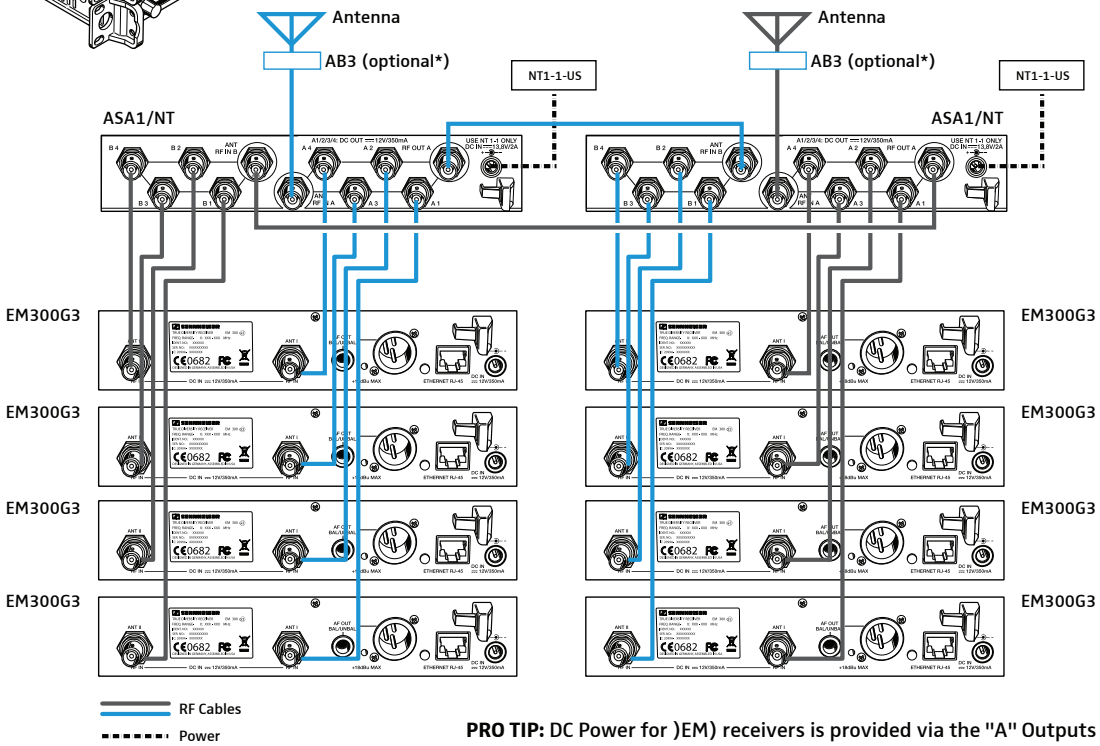
(4 Handheld Systems and 4 Lavalier Systems)

Qty	Model	Description
4	ew 365 G3	Handheld Systems w/MME865-1 capsules
4	ew 312 G3	Lavalier Systems w/ME2 capsules
1	G3 Omni Kit 8	Active splitter kit for eight receiver system using omnidirectional remote paddle antennas, includes two (2) ASA1/NT, two (2) A1031-U, GA3, two (2) BB1

Note: Various Lengths of RF cable available for antenna run (sold separately)



*AB3 boosters may be used to compensate for RF loss associated with long cable runs.



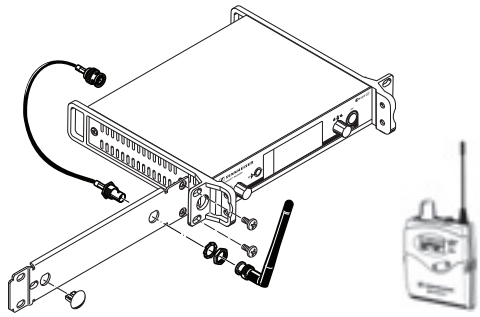
PRO TIP: DC Power for)EM) receivers is provided via the "A" Outputs

Single Channel Wireless Monitor System

(1 ew 300IEM G3 system, for a single stage mix)

NOTE: additional EK300 receivers may be added as needed to monitor the same mix

Qty	Model	Description
1	ew 300IEM G3	Wireless monitor system with rack mountable transmitter, GA3 rack mount kit, bodypack receiver and IE4 earbuds

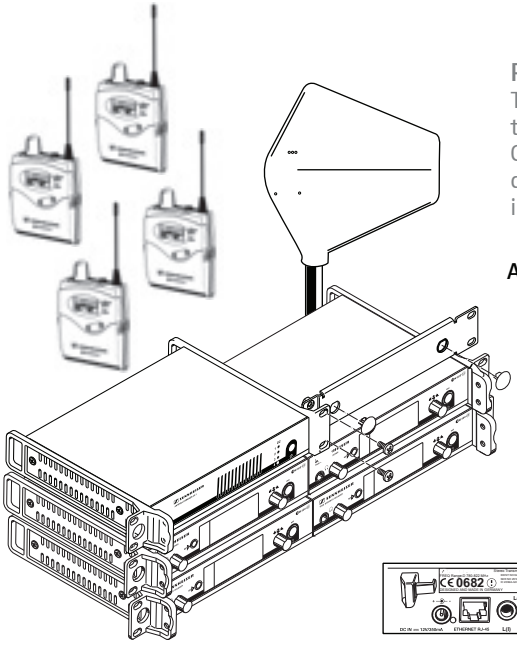


Four Channel Wireless Monitor System

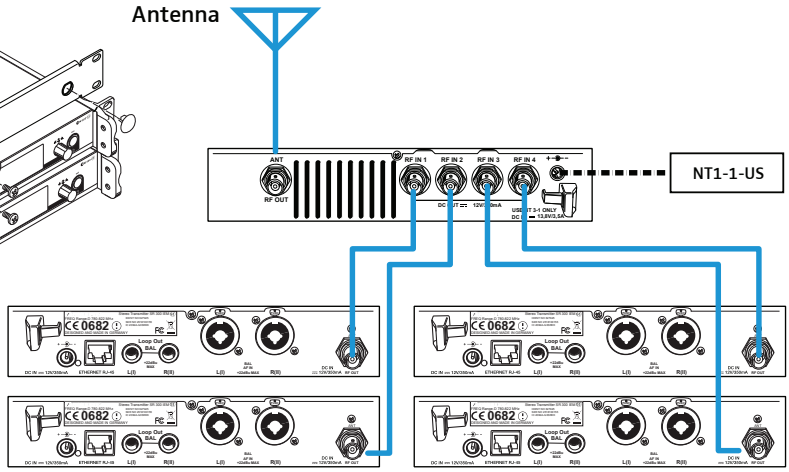
(4 ew300IEMG3 systems)

Qty	Model	Description
4	ew 300IEM G3	Wireless monitor system with rack mountable transmitter, GA3 rack mount kit, bodypack receiver and IE4 earbuds
1	G3 IEM Dir Kit 4	Active combiner kit for four IEM transmitters with DC power distribution, includes AC3/NT, GA3, A2003-UHF

Note: Various Lengths of RF cable available for antenna run (sold separately)



Pro Tip:
The AC3 has four (4) status LEDs on the front panel to indicate that power is being distributed to the connected SR300G3. Connect the included BNC cables as shown above to quickly diagnosis any potential power issues with your equipment and immediately identify the problematic rack position.



Antenna Distribution and Mounting Packages

Sennheiser has put together several antennas distribution packages to address common wireless scenarios.

G3 OMNI KIT 4
Active splitter kit for four receiver system using omnidirectional remote paddle antennas, includes:
(1) ASA1/NT active splitter
(2) A1031-U antennas
(1) GA3 rack mount kit

G3 OMNI KIT 8
Active splitter kit for eight receiver system using omnidirectional remote paddle antennas, includes:
(2) ASA1/NT active splitters
(2) A1031-U antennas
(1) GA3 rack mount kit
(2) BB1 interconnect BNC cables

G3 DIR KIT 4
Active splitter kit for four receiver system using directional remote paddle antennas, includes:
(1) ASA1/NT active splitter
(2) A2003-UHF antennas
(1) GA3 rack mount kit

G3 DIR KIT 8
Active splitter kit for eight receiver system using directional remote paddle antennas, includes:
(2) ASA1/NT active splitters
(2) A2003-UHF antennas
(1) GA3 rack mount kit
(2) BB1 interconnect BNC cables

G3 IEM DIR KIT 4
Active combiner kit for four IEM transmitters with DC power distribution, includes:
(1) AC3/NT active combiner
(1) A2003-UHF antennas
(1) GA3 rack mount kit

G3 FRONT KIT 4
Active splitter kit for four receiver system using front-mount antennas, includes:
(1) ASA1/NT active splitter
(1) AM2 front mount kit
(1) GA3 rack mount kit

G3 FRONT KIT 8
Active splitter kit for eight receiver system using front-mount antennas, includes:
(2) ASA1/NT active splitters
(1) AM2 front mount kit
(1) GA3 rack mount kit
(2) BB1 BNC interconnect cables

NOTE: The antennas supplied with all ew rack-mountable receivers are to be used only in chassis-mounted (rear jacks), or in conjunction with the AM2 front-mounting kit. These are ground plane devices and are never to be used as a remote antenna solution on the end of a cable.

The following items are not included with Sennheiser's antenna distribution kits.
You may require any of the following:

- Low loss antenna cable to connect remote antennas to the antenna distribution (cable length to suit the application)
- Mounting brackets for remote antennas
- Rack screws
- Additional GA3 rack-mount kits (not included with ew 100 G3 series systems)

Frequently Asked Questions

Why does my receiver emit a horrible loud static noise when I power off my transmitter?

This simply means your wireless system is operating on a frequency that is already in use, most likely by a television station. When the transmitter is on, everything may work fine because the transmitter's proximity overpowers the television signal. When the transmitter is powered off, the receiver still attempts to latch onto any signal it can find. If you see RF activity on the receiver's meters while the transmitter powered off, that means that there is another signal interfering with your system (most likely TV). You can use the ''Easy Setup'' / ''Scan New List'' process to find a new free frequency. Once you identify and select a free frequency, this loud static noise will no longer come through your system when the transmitter is powered off. If you use your system in various locations, it is always a good idea to perform the ''Easy Setup'' process to identify a clean frequency as the RF environment will change with geographic location. If your receiver cannot find a free Channel on which to operate, a temporary solution is to raise ''Squelch'' from ''Low'' to the ''Med'' setting. Raising Squelch will block larger RF signals. This is a temporary solution, and should only be used as a last resort as raising Squelch also reduces operating range. It is always best to find a free frequency, whenever possible.

My wireless system is on and functioning, however I am experiencing feedback and poor sound quality through my PA system.

From the factory, the output level on G3 rack-mount receivers is set to +18dB. This is a very strong signal and can result in feedback or poor sound quality with certain mixing consoles and amps. To remedy this, you can adjust the ''AF OUT'' menu on the receiver to a lower number. It is recommended to start at around ''0 dB'' and perhaps ''+3 dB or +6 dB'' depending on your application. These are guidelines, so feel free to experiment to get the best sound possible from your particular system.

Can I use rechargeable batteries?

Yes. Sennheiser offers the BA2015 rechargeable battery pack and the L2015/NT charging station. Most G3 portable components feature external charging contacts to allow charging the BA2015 by simply placing the portable device into the L2015 charger. Standard ''AA'' rechargeable batteries can be used with G3 systems, however the external contacts will only serve to charge the BA2015. The battery meter may also indicate a low battery status more quickly, due to the lower voltage produced by NiMH rechargeable batteries. The BA2015 was designed to provide the correct battery reading, and is the recommended solution.

AF and RF Mute – what's the difference?

With G3 bodypack transmitters, users can program the Mute switch to act as either an AF Mute (audio frequency) or an RF Mute (radio frequency). AF Mute performs a traditional audio mute. RF Mute will cut the transmitter's RF signal, which in turn mutes the receiver. This is particularly important for back-up transmitters and guitarists/bassists with multiple transmitters connected to multiple instruments and only one receiver. (Two transmitters cannot operate on the same frequency at the same time!). With RF Mute, multiple guitars can all be equipped with transmitters, all set to the same frequency, with only one active at a time. To switch instruments, simply engage the ''Mute,'' switch instruments and ''Unmute'' the new instrument.

What are the advantages of Low Power mode on ew 300/500 G3 transmitters?

In many instances, users think more power is better but, with respect to wireless systems, ''just enough'' power is best. The stronger your RF output power is, the greater chance your systems may interfere with each other. Higher RF output power also makes it more difficult to deploy large multi-channel systems. It will be possible to achieve higher channel counts in a 42 MHz switching bandwidth by decreasing your RF output power and utilizing properly designed antenna systems.

Frequently Asked Questions (Continued)

What is cable emulation?

Cable emulation allows a guitar player to add the effect of cable back into their instrument's tone. Longer cables add increasing amounts of capacitance, which can "load" the instrument's pickups. The result is a subtle but pleasing reduction of the instrument's high frequencies. When guitarists move from traditional cables to a wireless system, the sudden lack of capacitance can sound too bright or "clean". Cable emulation allows guitars to dial in three increasing levels (low / medium / high) of that familiar treble roll-off back into their sound.

Why can't I front-mount my antennas on the GA3 rack ears? The rack rails seem to get in the way of the two holes.

To rack-mount the antennas on a full 19" rack unit, you will need the GA3030-AM accessory. This accessory includes two rack handle mounting pieces that will enable you to attach the female BNC bulkhead to the rack, right where there are already drilled and tapped threads. The antenna cable will pass through the rack mount, via the holes, to the back of the receiver where it will connect. More common is the use of the GA3 with the AM2. This allows one to rack mount a single system and place the antennas in the same rack space on the included blank panel.

How do I use the built-in guitar tuner on my ew 100 or 500 series G3 receiver?

From the factory, the Tuner is inactive. To activate, access the receiver's menus by pressing the "SET" button. Use the up/down buttons (100 series) or jog dial (500 series) to find the "Advanced" menu and press "SET." Find "Guitar Tuner" and press "SET" again. Change the setting from "Inactive" to either "Active" or "Audio Mute." Press "SET" to store, and then tap the power button to exit to the main operating screen. With the tuner now active, use the up/down buttons or jog wheel to access the tuner screen. With the tuner set to "Active," the receiver will always pass audio as you tune. If you set the tuner to "Audio Mute," the receiver will automatically mute the audio when the tuner screen is active, allowing you to tune in silence.

Where's the mute switch on the handheld?

SKM 100 / 500 G3 handheld transmitters do not have a "Mute" button. True professional microphones (wired and wireless) usually do not have a mute button, as Front of House wants to retain control over the audio. If a mute button is desired for a specific application, the SKM 300 G3 handheld transmitter does have a programmable button. You can program this model to have the mute latch on/off, or be momentary such as "push to talk" or "push to cough." In addition, you can disable it entirely.

Conclusion

Wireless microphone and monitor systems have become standard fixtures in modern culture. Each time we turn on a television, see a performance, watch the news, go to the theatre, or enjoy a concert, we are surrounded by wireless technology. Wireless mic and monitoring systems allow you to express yourself to your audience without being constrained by cables.

Sennheiser is committed to making wireless systems powerful, yet simple to use. As such, evolution wireless G3 systems are ready to perform, right out of the box. With exceptional clarity, extended transmission range, and proven durability, evolution wireless G3 is the best choice for affordable, professional wireless performance.

Appendix: Frequency Preset Charts

The following charts detail evolution wireless G3 ranges (A / G / B). Each range covers a 42 MHz with a total of 1,680 UHF frequencies. All evolution wireless G3 systems include 20 banks of frequency presets. All channels (frequency presets) within a bank are calculated to be intermodulation-free. Banks 1-20 are factory-preset and cannot be changed.

The "U" frequency banks (ew 100: bank "U", ew 300/ew 500: banks "U1"–"U6") allow the user to store custom frequencies, freely selectable in 25 kHz steps. These frequencies will not necessarily be intermodulation-free.

The following tables list the frequency presets in the frequency banks "1" through "20". ew 100 G3 systems include the first 12 channels in each frequency bank, ew 300 G3 series include the first 24 channels, and ew 500 G3 systems include the maximum 32 channels in each frequency bank.

For additional information about evolution wireless G3 or other Sennheiser products, please contact Sennheiser at (860) 434-9190, or visit our website: www.sennheiserUSA.com

Frequency Range A 516–558 MHz

US TV Channel

Ch. 21 (512–518 MHz)
Ch. 22 (518–524 MHz)
Ch. 23 (524–530 MHz)
Ch. 24 (530–536 MHz)
Ch. 25 (536–542 MHz)
Ch. 26 (542–548 MHz)
Ch. 27 (548–554 MHz)
Ch. 28 (554–560 MHz)

ew100
ew300
ew500

Channel	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6	Bank 7	Bank 8	Bank 9	Bank 10
1	518.200	524.250	530.100	536.350	542.900	548.850	554.100	518.125	516.000	516.000
2	518.700	524.800	530.800	537.700	543.600	549.800	554.550	518.500	516.875	516.400
3	519.650	525.550	531.650	538.650	544.450	550.250	555.200	519.000	517.500	517.000
4	520.450	526.550	532.050	539.300	545.050	551.100	555.700	519.625	520.175	517.800
5	520.900	527.700	533.050	540.100	545.450	551.500	556.450	520.375	522.625	519.000
6	521.600	528.100	533.550	540.700	546.200	552.150	557.050	521.375	524.800	520.600
7	522.000	529.050	534.850	541.100	546.750	552.950	557.450	523.375	529.625	522.800
8	522.900	529.500	535.750	541.800	547.700	553.500	558.000	525.875	530.825	526.000
9	528.800	516.950	517.300	518.900	516.900	524.050	516.300	534.125	540.525	528.400
10	535.100	535.250	523.300	519.800	524.750	533.500	524.750	535.375	553.625	533.200
11	552.350	536.750	547.200	550.100	551.250	537.700	533.550	537.500	516.375	537.200
12	531.600	554.900	551.050	555.050	553.200	556.900	538.250	540.125	518.425	541.600
13	539.900	519.200	520.150	516.150	518.100	518.950	517.200	541.750	520.975	549.000
14	540.500	540.400	520.800	516.900	521.900	522.300	526.800	521.000	521.525	552.400
15	542.900	541.850	521.250	524.600	522.800	523.450	529.550	522.125	523.350	519.475
16	543.950	542.650	521.850	525.500	523.850	527.250	532.700	522.500	526.375	521.300
17	546.050	545.150	523.900	526.550	528.450	528.400	538.950	524.125	531.400	523.850
18	546.600	546.050	525.000	545.300	528.950	529.000	544.800	524.500	532.250	527.625
19	550.850	547.250	553.150	546.500	531.900	532.600	547.200	525.125	533.975	530.150
20	552.950	548.150	555.700	549.350	553.650	534.100	550.350	534.500	534.725	531.175
21	553.700	550.400	556.900	556.250	555.000	538.300	530.250	535.000	536.200	539.950
22	556.100	557.900	557.550	520.550	519.500	545.100	531.350	536.125	543.875	544.975
23	524.750	527.000	528.900	523.100	521.300	521.350	534.900	536.750	545.050	547.675
24	529.500	519.650	539.250	531.800	525.500	529.750	537.750	537.875	533.375	
25	533.900	521.100	541.900	535.850	527.750	531.850	542.550	538.750		
26	543.350	530.250	549.250	551.600	533.300	539.500	549.350	539.125		
27	545.150	534.500	550.050	552.500	540.600	543.400		539.750		
28	547.550	546.750	550.450	553.250	555.900	544.500		540.625		
29	548.900	551.450	557.950			557.400		541.000		
30		552.200								
31										
32										

Frequency Range A 516–558 MHz (continued)

US TV Channel

Ch. 21 (512–518 MHz)
Ch. 22 (518–524 MHz)
Ch. 23 (524–530 MHz)
Ch. 24 (530–536 MHz)
Ch. 25 (536–542 MHz)
Ch. 26 (542–548 MHz)
Ch. 27 (548–554 MHz)
Ch. 28 (554–560 MHz)

ew100
ew300
ew500

Channel	Bank 11	Bank 12	Bank 13	Bank 14	Bank 15	Bank 16	Bank 17	Bank 18	Bank 19	Bank 20
1	516.100	516.200	516.000	516.150	516.275	516.375	516.100	516.000	518.100	517.500
2	516.500	516.600	516.400	516.550	516.675	516.775	516.975	516.400	518.475	517.875
3	517.100	517.200	516.900	517.050	517.175	517.275	517.600	517.000	518.975	518.375
4	517.900	518.000	517.500	517.650	517.775	517.875	520.275	517.800	519.600	519.000
5	519.100	519.200	517.950	518.100	518.225	518.325	522.725	519.000	520.350	519.750
6	520.700	520.800	518.500	518.650	518.775	518.875	524.900	520.600	521.350	520.750
7	522.900	523.000	519.150	519.300	519.425	519.525	529.725	522.800	522.975	522.375
8	526.100	526.200	520.500	520.650	520.775	520.875	530.925	526.000	524.975	524.375
9	528.500	528.600	521.200	521.350	521.475	521.575	540.625	528.400	527.100	526.500
10	533.300	533.400	522.650	522.800	522.925	523.025	553.725	533.200	530.100	529.500
11	537.300	537.400	523.400	523.550	523.675	523.775	516.475	537.200	531.350	530.750
12	541.700	541.800	525.100	525.250	525.375	525.475	518.525	541.600	534.475	533.875
13	549.100	549.200	526.500	526.650	526.775	526.875	521.075	549.000	537.975	537.375
14	519.575	557.800	529.100	529.250	529.375	529.475	521.625	552.400	542.725	540.125
15	521.400	519.675	530.900	531.050	531.175	531.275	523.450	519.475	548.350	548.125
16	523.950	521.500	532.050	532.200	532.325	532.425	526.475	521.300	553.350	552.000
17	527.725	524.050	533.950	534.100	534.225	534.325	531.500	523.850	521.850	521.875
18	530.250	527.825	538.600	538.750	538.875	538.975	532.350	527.625	522.475	523.750
19	531.275	530.350	543.150	543.300	543.425	543.525	534.075	530.150	523.850	525.500
20	540.050	531.375	543.950	544.100	544.225	544.325	534.825	531.175	524.350	527.000
21	545.075	540.150	547.900	548.050	548.175	548.275	536.300	539.950	527.725	527.375
22	547.775	545.175					543.975	544.975	528.975	528.375
23		547.875					545.150	547.675	529.475	528.750
24							533.475	541.975	532.225	531.375
25								543.725	532.725	531.875
26								546.550	538.475	533.375
27									539.100	538.125
28									539.600	538.625
29									540.975	540.500
30									542.225	542.625
31									543.850	
32										

Frequency Range G 566–608 MHz

US TV Channel

Ch. 30 (566–572 MHz)
Ch. 31 (572–578 MHz)
Ch. 32 (578–584 MHz)
Ch. 33 (584–590 MHz)
Ch. 34 (590–596 MHz)
Ch. 35 (596–602 MHz)
Ch. 36 (602–608 MHz)

ew100
ew300
ew500

Channel	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6	Bank 7	Bank 8	Bank 9	Bank 10
1	566.450	572.400	578.400	584.400	590.700	596.400	602.250	566.000	566.000	566.100
2	566.950	573.100	579.300	584.900	591.550	596.800	602.800	566.875	566.400	566.500
3	567.900	574.100	579.700	585.550	592.600	597.500	603.200	567.500	567.000	567.100
4	568.350	574.950	580.750	586.000	593.400	598.000	604.300	570.175	567.800	567.900
5	569.500	576.150	581.200	586.850	593.950	599.400	605.100	572.625	569.000	569.100
6	570.050	576.550	582.400	587.400	594.700	600.050	605.550	574.800	570.600	570.700
7	570.850	577.200	583.250	588.600	595.100	601.050	606.550	579.625	572.800	572.900
8	571.250	577.650	583.800	589.500	595.700	601.600	607.700	580.825	576.000	576.100
9	584.300	567.900	568.100	567.250	571.100	570.200	568.250	590.525	578.400	578.500
10	591.550	581.850	568.700	574.450	578.450	575.900	574.850	601.700	583.200	583.300
11	604.250	597.000	592.250	598.000	584.450	581.750	580.700	603.625	587.200	587.300
12	606.450	607.750	603.500	601.150	605.600	585.050	587.900	608.000	591.600	591.700
13	572.800	566.150	573.800	567.850	566.450	566.450	566.300	566.375	599.000	599.100
14	577.900	566.950	575.150	568.900	567.650	567.800	567.350	567.900	602.400	602.500
15	580.150	580.900	587.450	571.600	568.100	568.250	571.700	568.425	607.600	607.700
16	586.550	586.700	597.200	572.200	569.900	569.600	572.450	569.125	568.175	568.275
17	589.750	590.300	597.950	573.850	571.550	571.700	574.100	569.575	569.475	569.575
18	593.550	593.100	600.200	580.750	572.750	573.500	575.900	570.975	571.300	571.400
19	595.050	595.250	600.950	582.100	576.800	577.850	578.900	571.525	573.850	573.950
20	596.700	601.300	602.750	595.750	583.550	578.600	582.800	573.350	577.625	577.725
21	599.550	602.100	604.100	598.600	586.100	589.550	591.350	576.375	580.150	580.250
22	601.050	602.650	605.900	601.750	600.050	594.650	593.450	581.400	581.175	581.275
23	603.250	606.000	606.500	603.550	603.950	605.000	597.500	582.250	589.950	590.050
24	607.750	606.950	607.850	606.100	605.150	606.050	598.550	583.975	594.975	595.075
25	574.900	569.350	569.900	566.500	566.900	572.900	568.850	584.725	597.675	597.775
26	582.650	570.250	571.550	570.400	573.500	574.250	570.500	586.200	600.975	601.075
27	593.150	583.350	572.750	574.900	574.700	576.500	571.250	593.875	601.900	602.000
28	594.200	583.900	575.750	590.800	577.700	580.400	576.800	595.050	604.625	604.725
29	596.200	590.800	584.600	591.850	600.950	580.850	582.200	600.625	605.250	605.350
30	597.550	594.500	594.650	593.200	602.150	590.300	583.850	601.275	604.125	604.225
31	603.850	603.550	598.550	600.100	606.500	602.900	596.300	607.050	603.375	603.475
32	607.200	604.600	607.400	607.900	607.700	607.250	601.100	583.375		

Frequency Range G 566–608 MHz (continued)

US TV Channel

Ch. 30 (566–572 MHz)
Ch. 31 (572–578 MHz)
Ch. 32 (578–584 MHz)
Ch. 33 (584–590 MHz)
Ch. 34 (590–596 MHz)
Ch. 35 (596–602 MHz)
Ch. 36 (602–608 MHz)

ew100
ew300
ew500

Channel	Bank 11	Bank 12	Bank 13	Bank 14	Bank 15	Bank 16	Bank 17	Bank 18	Bank 19	Bank 20
1	566.200	566.000	566.125	566.275	566.375	566.150	607.850	566.100	568.100	567.500
2	566.600	566.400	566.525	566.675	566.775	566.525	607.475	566.975	568.475	567.875
3	567.200	566.900	567.025	567.175	567.275	566.975	607.025	567.600	568.975	568.375
4	568.000	567.500	567.625	567.775	567.875	567.500	606.500	570.275	569.600	569.000
5	569.200	567.950	568.075	568.225	568.325	568.100	605.900	572.725	570.350	569.750
6	570.800	568.500	568.625	568.775	568.875	568.775	605.225	574.900	571.350	570.750
7	573.000	569.150	569.275	569.425	569.525	569.525	604.475	579.725	572.975	572.375
8	576.200	570.500	570.625	570.775	570.875	570.425	603.575	580.925	574.975	574.375
9	578.600	571.200	571.325	571.475	571.575	571.625	602.375	590.625	577.100	576.500
10	583.400	572.650	572.775	572.925	573.025	573.125	600.875	601.800	580.100	579.500
11	587.400	573.400	573.525	573.675	573.775	574.850	599.150	603.725	581.350	580.750
12	591.800	575.100	575.225	575.375	575.475	577.325	596.675	566.475	584.475	583.875
13	599.200	576.500	576.625	576.775	576.875	580.400	593.600	568.000	587.975	587.375
14	602.600	579.100	579.225	579.375	579.475	582.575	591.425	568.525	592.725	590.125
15	607.800	580.900	581.025	581.175	581.275	585.350	588.650	569.225	598.350	598.125
16	568.375	582.050	582.175	582.325	582.425	589.025	584.975	569.675	603.350	602.000
17	569.675	583.950	584.075	584.225	584.325	592.175	581.825	571.075	606.100	607.000
18	571.500	588.600	588.725	588.875	588.975	596.675	577.325	571.625	571.850	571.250
19	574.050	593.150	593.275	593.425	593.525	598.550	575.450	573.450	572.475	571.875
20	577.825	593.950	594.075	594.225	594.325	601.850	572.150	576.475	573.850	573.750
21	580.350	597.900	598.025	598.175	598.275	605.675	568.325	581.500	574.350	575.500
22	581.375	600.250	600.375	600.525	600.625	606.725	567.275	582.350	577.725	577.000
23	590.150	601.200	601.325	601.475	601.575	607.900	566.100	584.075	578.975	577.375
24	595.175	606.300	606.425	606.575	606.675	607.275	566.725	584.825	579.475	578.375
25	597.875	607.550	607.675	607.825	607.925	603.300	570.700	586.300	582.225	578.750
26	601.175					602.500	571.500	593.975	582.725	581.375
27	602.100					595.725	578.275	595.150	588.475	581.875
28	604.825					589.725	584.275	600.725	589.100	583.375
29	605.450					584.575	589.425	601.375	589.600	588.125
30	604.325					579.000	595.000	607.150	590.975	588.625
31	603.575					575.275	598.725	583.475	592.225	590.500
32						569.925	604.075		593.850	592.625

Frequency Range B 626–668 MHz

US TV Channel

Ch. 40 (626–632 MHz)
Ch. 41 (632–638 MHz)
Ch. 42 (638–644 MHz)
Ch. 43 (644–650 MHz)
Ch. 44 (650–656 MHz)
Ch. 45 (656–662 MHz)
Ch. 46 (662–668 MHz)

ew100
ew300
ew500

Channel	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6	Bank 7	Bank 8	Bank 9	Bank 10
1	626.300	632.350	638.450	644.550	650.200	656.350	662.750	632.925	626.000	626.000
2	626.750	632.800	639.050	645.450	650.750	656.800	663.150	635.425	626.875	626.400
3	627.450	633.750	639.450	646.650	651.600	657.450	663.950	639.350	627.500	627.000
4	628.450	634.350	640.200	647.200	652.800	657.850	664.500	640.050	630.175	627.800
5	628.900	635.700	640.750	648.050	653.250	659.050	665.650	648.500	632.625	629.000
6	629.700	636.200	641.550	648.500	654.300	659.900	666.100	653.950	634.800	630.600
7	630.800	636.900	642.600	649.150	654.700	660.900	667.050	655.350	639.625	632.800
8	631.750	637.300	643.450	649.650	655.600	661.600	667.550	656.250	640.825	636.000
9	640.550	628.850	628.550	630.500	630.500	626.250	627.550	659.025	650.525	638.400
10	646.100	641.600	649.700	636.050	641.750	637.000	629.750	665.175	661.700	643.200
11	653.300	647.150	655.700	659.600	665.300	640.900	642.450	665.675	663.625	647.200
12	659.150	665.300	663.050	666.800	665.900	652.150	649.700	667.275	668.000	651.600
13	635.450	643.100	629.000	627.950	626.150	627.050	626.250	631.200	626.375	659.000
14	636.500	643.850	630.200	632.300	627.500	628.000	630.750	633.750	627.900	662.400
15	642.650	648.200	634.100	632.900	628.100	631.350	632.950	636.025	628.425	667.600
16	651.200	652.250	648.050	635.450	629.900	631.900	634.450	638.500	629.125	628.175
17	655.100	653.000	650.600	638.300	631.250	632.700	637.300	640.450	629.575	629.475
18	658.100	656.450	657.350	651.950	633.050	638.750	638.950	643.650	630.975	631.300
19	659.900	658.250	661.400	653.300	633.800	643.700	640.450	653.000	631.525	633.850
20	661.550	661.250	662.600	660.200	636.050	647.300	644.250	655.875	633.350	637.625
21	662.300	662.300	664.250	661.850	636.800	653.100	647.450	660.050	636.375	640.150
22	665.750	663.050	666.050	662.450	646.550	666.100	653.850	661.200	641.400	641.175
23	666.650	664.550	666.500	665.150	658.850	667.050	656.100	662.500	642.250	649.950
24	667.700	666.950	667.700	666.200	660.200	667.850	661.200	667.700	643.975	654.975
25	632.900	626.150	626.450	626.150	626.600	629.400	626.800	636.750	644.725	657.675
26	638.150	626.900	627.650	633.950	635.450	630.450	630.150	641.425	646.200	660.975
27	646.850	628.100	632.000	640.850	639.350	636.250	636.450	651.150	653.875	661.900
28	650.150	641.150	633.200	642.200	649.400	639.500		637.800	655.050	664.625
29	651.800	653.600	656.450	643.250	658.250	643.250		639.800	660.625	665.250
30	656.150	655.700	659.450	659.150	661.250	650.650		640.850	661.275	664.125
31	663.500	660.350	660.650	663.650	662.450	663.700		651.350	667.050	663.375
32	664.550	665.900	667.250	667.550	664.100	664.500		659.100	643.375	

Frequency Range B 626–668 MHz (continued)

US TV Channel

Ch. 40 (626–632 MHz)
Ch. 41 (632–638 MHz)
Ch. 42 (638–644 MHz)
Ch. 43 (644–650 MHz)
Ch. 44 (650–656 MHz)
Ch. 45 (656–662 MHz)
Ch. 46 (662–668 MHz)

ew100
ew300
ew500

Channel	Bank 11	Bank 12	Bank 13	Bank 14	Bank 15	Bank 16	Bank 17	Bank 18	Bank 19	Bank 20
1	626.100	626.200	626.050	626.175	626.300	626.375	626.150	667.850	626.100	628.100
2	626.500	626.600	626.450	626.575	626.700	626.775	626.525	667.475	626.975	628.475
3	627.100	627.200	626.950	627.075	627.200	627.275	626.975	667.025	627.600	628.975
4	627.900	628.000	627.550	627.675	627.800	627.875	627.500	666.500	630.275	629.600
5	629.100	629.200	628.000	628.125	628.250	628.325	628.100	665.900	632.725	630.350
6	630.700	630.800	628.550	628.675	628.800	628.875	628.775	665.225	634.900	631.350
7	632.900	633.000	629.200	629.325	629.450	629.525	629.525	664.475	639.725	632.975
8	636.100	636.200	630.550	630.675	630.800	630.875	630.425	663.575	640.925	634.975
9	638.500	638.600	631.250	631.375	631.500	631.575	631.625	662.375	650.625	637.100
10	643.300	643.400	632.700	632.825	632.950	633.025	633.125	660.875	661.800	640.100
11	647.300	647.400	633.450	633.575	633.700	633.775	634.850	659.150	663.725	641.350
12	651.700	651.800	635.150	635.275	635.400	635.475	637.325	656.675	626.475	644.475
13	659.100	659.200	636.550	636.675	636.800	636.875	640.400	653.600	628.000	647.975
14	662.500	662.600	639.150	639.275	639.400	639.475	642.575	651.425	628.525	652.725
15	667.700	667.800	640.950	641.075	641.200	641.275	645.350	648.650	629.225	658.350
16	628.275	628.375	642.100	642.225	642.350	642.425	649.025	644.975	629.675	663.350
17	629.575	629.675	644.000	644.125	644.250	644.325	652.175	641.825	631.075	666.100
18	631.400	631.500	648.650	648.775	648.900	648.975	656.675	637.325	631.625	631.850
19	633.950	634.050	653.200	653.325	653.450	653.525	658.550	635.450	633.450	632.475
20	637.725	637.825	654.000	654.125	654.250	654.325	661.850	632.150	636.475	633.850
21	640.250	640.350	657.950	658.075	658.200	658.275	665.675	628.325	641.500	634.350
22	641.275	641.375	660.300	660.425	660.550	660.625	666.725	627.275	642.350	637.725
23	650.050	650.150	661.250	661.375	661.500	661.575	629.925	626.100	644.075	638.975
24	655.075	655.175	666.350	666.475	666.600	666.675	635.275	626.725	644.825	639.475
25	657.775	657.875	667.600	667.725	667.850	667.925	639.000	630.700	646.300	642.225
26	661.075	661.175					644.575	631.500	653.975	642.725
27	662.000	662.100					649.725	638.275	655.150	648.475
28	664.725	664.825					655.725	644.275	660.725	649.100
29	665.350	665.450					662.500	649.425	661.375	649.600
30	664.225	664.325					663.300	655.000	667.150	650.975
31	663.475	663.575					667.275	658.725	643.475	652.225
32							667.900	664.075		653.850

www.sennheiserUSA.com

Sennheiser Electronic Corporation
One Enterprise Drive, Old Lyme, CT 06371
Tel: (860) 434-9190 • Fax: (860) 434-1759

Latin America: Tel: 52-55-5639-0956 • Fax: 52-55-5639-9482

Canada: Tel: (514) 426-3013 Fax: (514) 426-3953
www.sennheiser.ca

Revised: 04/2012

04/12 Working with evolution wireless G3 - Printed in USA - Sennheiser is a registered trademark of Sennheiser electronic GmbH & Co. KG - Subject to alterations and modifications.